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MANAGING WORKING CAPITAL

Applying a global policy to a local subsidiary

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Tomas Lehtinen
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Tomas Lehtinen

Abstract
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MANAGING WORKING CAPITAL – APPLYING A GLOBAL POLICY TO A LOCAL SUBSIDIARY

PURPOSE OF THE STUDY

The objective of this thesis is to investigate working capital management practices in the international services industry, mainly focusing on the specifics of the case company. The focus in the case study is placed on conducting a working capital audit and evaluating the gap between the newly issued global policy and the current working practices in the case company's local Finnish branch.

DATA AND METHODOLOGY

The case study is conducted by doing an operational audit of the case company's current working capital management. The methodology used in the case study is divided into two parts, qualitative (interviews) and quantitative (actual case data). The data in this study comprises of the conducted in-depth interviews with the case company personnel, data from the case company internal databases and systems, and public balance sheet and income statement data.

RESULTS

The main findings in this study indicate that the case company has noticeable deviations in their current working practices versus the new global working capital policy requirements. In the interviews, a number of improvement possibilities are discovered. Based on the discovered improvement areas, a proposed list of key actions is developed. Some of the actions on the action list have already been dealt with in the case company during the time the study has been ongoing. The numerical analysis shows that the working capital management in the case company is, despite system constraints, handled reasonably well. The trend analysis, however, confirms the findings from the interviews that the working capital management has been developing to and adverse direction from the case company's point of view.

The study also shows that there exists a relationship between the yearly revenue and the number of payment terms days among the case company customers; the higher the yearly revenue, the longer the payment terms days. Finally, an analysis of the case company's possibilities to start using the new global working capital measures is performed. A proposal for the working capital scorecard for the case company's Finnish branch is developed based on the findings from the interviews and data analysis.

KEYWORDS

Global, Working capital, Order-to-Cash, Purchase-to-Pay, Policy, Working capital audit

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1. Introduction

This study investigates the working capital management methods in the international services industry, focusing mainly on the specifics of the case company. The focus in the case study is placed on conducting a working capital audit and evaluating the gap between the newly issued global policy and the current working practices in the case company's local Finnish branch.

1.1. Academic and practical motivation

The discussion on working capital (WCAP) and cash management in the journals, magazines and academic forums was reasonably active in the in the 1970's and the early 1980's. This resulted e.g. to the emergence of a new journal, The Journal of Cash Management, in 1981. After a slightly lower period of activity in the mid-1980's, the high interest rates brought the issue of cash management to the limelight again in the late 1980's and 1990's. Since then, working capital items have been a part of all corporate financial management considerations.

In September 2004, CFO Magazine reported that although Europe has been traditionally behind the United States in working capital and cash management practices, European companies are gradually starting to catch up. European companies have started to place more focus on the active working capital management, and that can be seen in the yearly CFO Magazine survey (The 2004 Working Capital Survey, 2004) results. The freshly issued survey for year 2005 continues to support last year's findings (The 2005 Working Capital Survey, 2005). In addition, the increasing globalization and increasing competition focus the companies more and more on the supply chain management and tight corporate financial control. These in turn have a direct link to the corporate working capital management and the capital tied in the company operations.

There exists a vast amount of literature on the general working capital theory and the related cash flow theories. Considerable emphasis has also been put in developing cash flow forecasts and budgets, either under certainty or using probabilistic models. However, little has been written about applying the working capital policy changes and practices in real life. Also, the effect of applying global working capital policies on the local branches or subsidiaries has not been discussed adequately. Are global corporate requirements feasible to implement locally,

and do they also benefit the local organization? In addition, working capital literature almost always focuses on the manufacturing companies' point of view where inventories play an essential part. Little focus has so far been put on the service industry where fewer components of can be used in working capital management.

In the case company, the situation has changed dramatically during the last 3 years, both in terms of the company structure and ways of working. As one step of the changes a new global working capital policy guideline was issued in late 2004, and the aim is to comply globally to this policy in all company entities during 2005. This resulted in a need to have the local policies evaluated and harmonized and current working practices to be evaluated and improved in the company's Finnish branch.

My own interest in the field of corporate finance, financial management and treasury also played a substantial part in motivating the study.

1.2. Research problem and purpose

In the study the main research problems are from the case company and very operative in nature. The aim is to conduct a working capital audit (sometimes referred to as working capital performance analysis) in the case company and evaluate the possibilities for a full-scale implementation of the new global policy. The aim is also to suggest alternative working practices and methods in cases where the audit reveals a need for improvement and develop a working capital scorecard with targets for performance measurement.

In the theory section of the study, the aim is to give an overview of the working capital management theory, which can then be utilized in the working capital audit. I shall also give an overview of the academic research in the working capital management and related cash management.

1.3. Contribution

The main contribution of the study is to offer additional information on the application of global policies to a local branch and bringing out the specific challenges of working capital

management in the case company. The study also aims to contribute to the case company development.

1.4. Scope of the study

Although long-term financing strategies largely define what kind of working capital management is possible and needed, only short-term financing decisions are included in this study. In the case study, I shall focus on the case company data and limit the study to the currently largest legal entity in the case company's Finnish company structure, leaving local subsidiaries and other entities using the same (shared) financial resources out of the study.

1.5. Limitations of the study

The study is completed to a large extent with actual data and interviews from the case company. The major limitation is the confidentiality of the key pieces of information and the consistency of the case company data over time. To tackle the issue of confidentiality, I shall present the case company in this paper without company details and names. Some of the actual company data is not presented in full descriptive detail or is presented with altered numbers. This is done in a way that it will neither jeopardize the readability of the findings nor lessen the reliability of the findings. The challenge of inconsistent data is taken into account in the analysis.

1.6. Structure of the study

The study is organized in the following sequence: Introduction (Chapter 1), Theoretical background (Chapter 2), Previous research (Chapter 3), Case description (Chapter 4), Data and Methodology (Chapter 5), Analysis and results (Chapter 6). The paper is concluded with Summary and conclusions (Chapter 7).

2. Theoretical background

2.1. Working capital and treasury

The majority of financial management literature and theory focuses on major long term decisions for the company. In addition to these long-term decisions there is, however, also a set of decisions that are individually small or even routine tasks, but collectively constitute a very important part of the company finance and invested capital. These decisions involve the short-term decisions of. e.g. using overnight deposits for excess cash, short term loans to pay the suppliers, granting extra credit for a customer and deciding on ordering more material for production. The decisions have an immediate impact on the company working capital and usually directly on the cash balance. Moreover, the level of working capital has a direct impact on the company cash flows, return on investment and company valuation. Due to the short-term nature of working capital, working capital management has also been referred to as the company short-term finance.

Using the standard balance sheet based definition of working capital (WCAP) presented in literature, managing working capital means managing current assets (CA) and current liabilities (CL). Current assets can be divided into cash and marketable securities, accounts receivable, and inventories. Current liabilities can also be classified in a similar way to short-term loans, accounts payable and to other current liabilities. (Brealey & Myers, 1996, 823-824). WCAP can, and should, also be categorized to permanent and temporary parts of working capital. Permanent working capital is the base level of WCAP that does not change from season to season. Temporary working capital, by contrast, is more variable, e.g. due to the seasonal volume of sales.

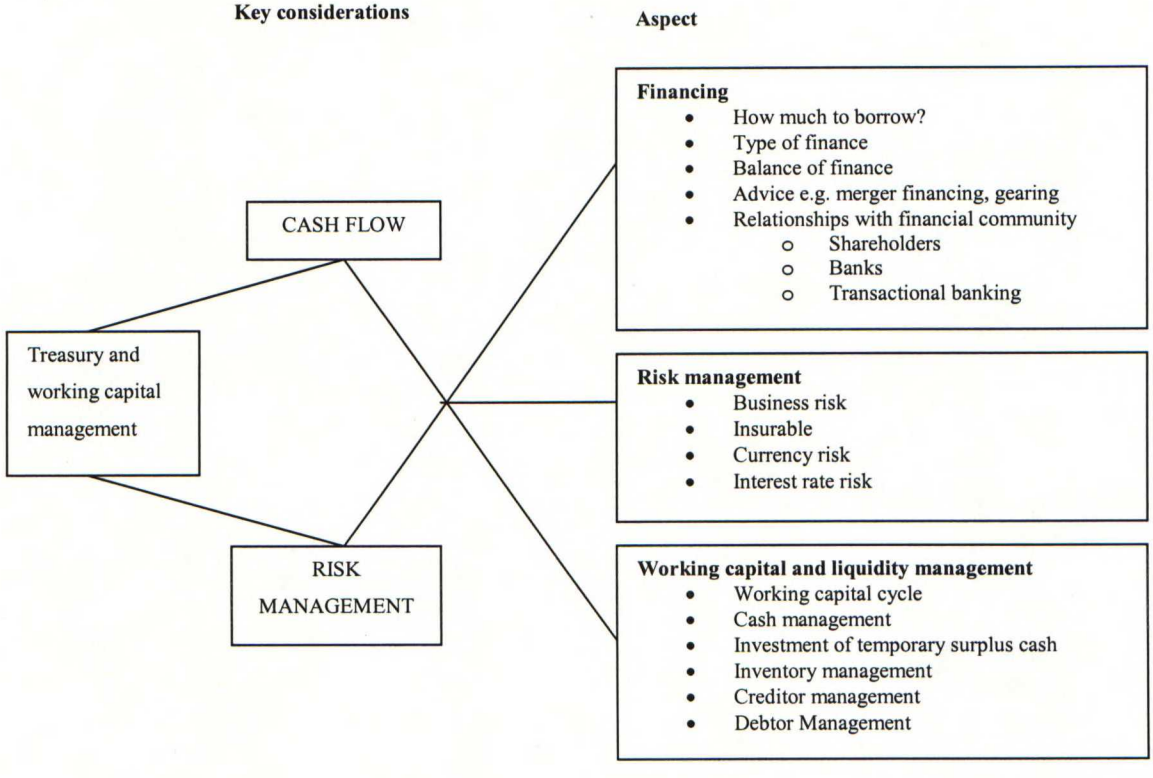
Depending on the literary sources, WCAP is understood either as the total sum of current assets or as the sum of current assets minus the sum of current liabilities (sometimes referred to as net working capital, NWCAP). To avoid confusion in this study I shall define WCAP as the sum of current assets and NWCAP as current assets minus current liabilities. Figure 1 presents the working capital classes as described above.

Figure 1: Working capital classes

Assets	Liabilities
Current Assets (CA) = WCAP • Cash and marketable securities • Accounts receivable (AR) • Inventories	Current Liabilities (CL) • Short-Term loans • Accounts Payable (AP) • Other current liabilities
(Net Working Capital) = NWCAP	Long-Term Debt and Equity
Fixed Assets	

Working capital and cash flow management are closely related and hence in several circumstances managed by same individuals. To define the roles and responsibilities for WCAP management and company treasury functions, Arnold (1998, 543-544) uses the chart below (Figure 2) to show the linkage between WCAP management and treasury.

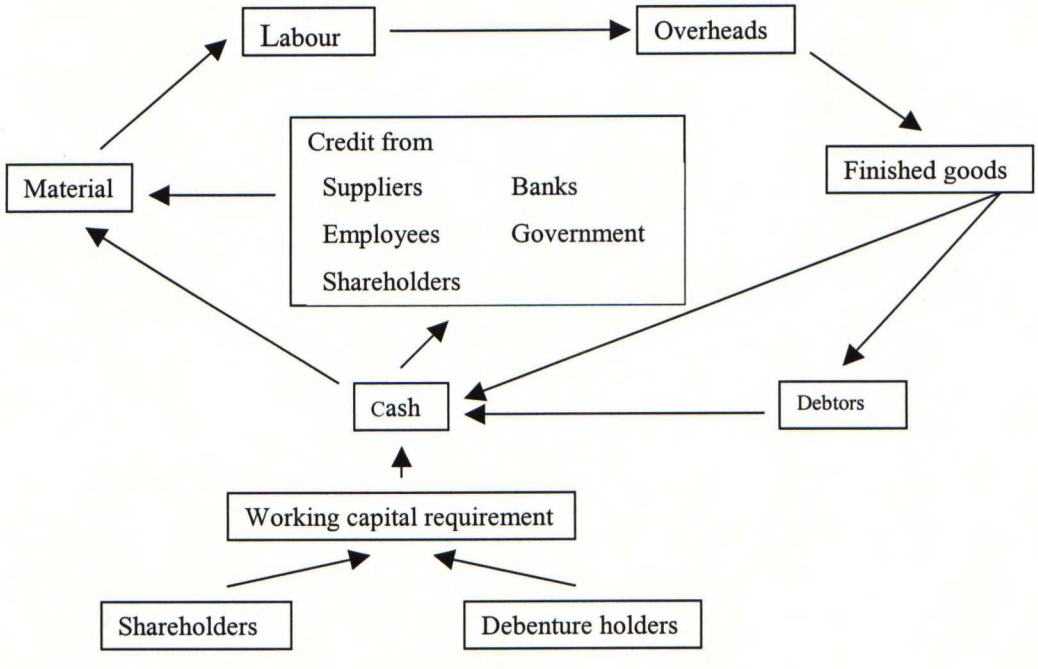
Figure 2: The main areas of treasury and working capital management



In large companies, financing and risk management aspects are usually handled by a specialized treasury department, whereas in smaller companies these tasks are usually the responsibility of the chief accountant/controller and their team. Managing working capital and liquidity is in many companies a set of tasks split between several people or departments within the company. Working capital and liquidity management decisions are mainly the responsibility of the line managers, with the support from treasury functions. In this study I will focus on the working capital and liquidity management aspects.

To describe the general transactions related to WCAP management, a chart of working capital cycle (WCC) is often used. For example Pass & Pike (1984) described the nature of working capital and the objectives of working capital management as presented in Figure 3 below. They explained the nature of working capital with a working capital cycle which they presented as set of continuous cash flows.

Figure 3: Working capital cycle



Pass & Pike (1984) stated that the primary task of working capital management is to match the above presented asset and liability movements over time. According to them, the two most important goals of working capital management are profitability and liquidity. There is an obvious trade-off between these two objectives: increasing liquidity usually means decreasing

profitability and vice versa. It is also important to note that money tied in any of the stages in the working capital cycle has an opportunity cost.

The WCAP cycle can be expressed and measured in terms of the length of time between the acquisition of raw materials and other inputs and the inflow of cash from the sale of goods. Arnold (1998, 560-561) presents the concept of cash conversion cycle (CCC), originally introduced by Gitman (1974) and later refined by Gitman and Sachdeva (1982). It measures the length of time between the company's outlay on inputs and the receipt of money from the sale of goods. The shorter the period, the fewer resources the company needs to tie up. Figure 4 and Figure 5 present Arnold's (1998) illustration of the CCC as part of the WCAP cycle and the summary of the CCC.

Figure 4: The cash conversion cycle as part of working capital cycle

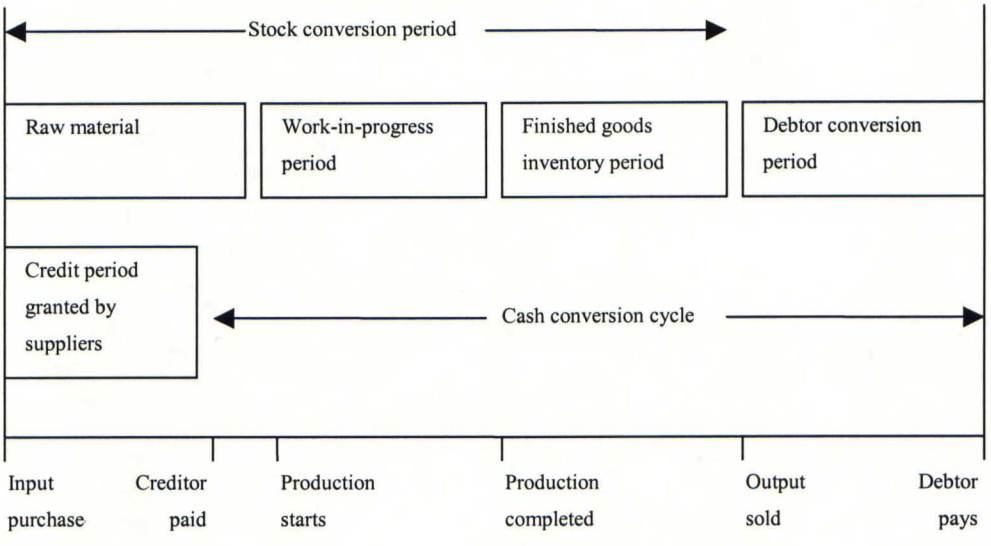
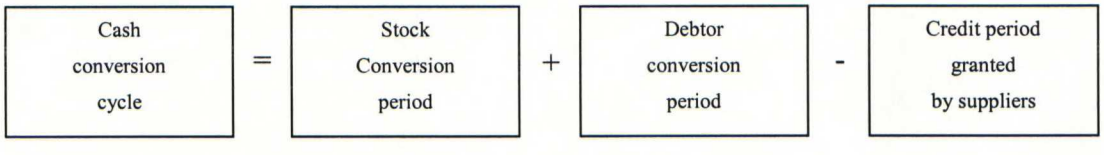


Figure 5: Summary of cash conversion cycle



The aim for the company should be to reduce the CCC to the smallest possible time, yet ensuring that costs do not rise and sales are not impacted adversely. The evaluation of costs and benefits for each case is needed to weigh the costs and benefits of the decisions to shorten the CCC.

Due to the routine nature of the majority of daily WCAP decisions, working capital policies (sometimes referred to as the company financing policies) are set out to guide company management and employees to manage elements of working capital within the given limits. To ensure fast handling of WCAP items, companies use WCAP policies to state the principles, responsibilities and authorization limits around WCAP items. Often the WCAP policy is expanded later with actual detailed work instructions for the staff.

The main basic decision in working capital policies is to decide how lean the company wants to keep its working capital. In this context, the matching principle of working capital management is often used as a guideline. The principle states that management should try to match the maturity of capital sources with the maturity of their uses. Hence the principle suggests that a company should finance its fixed assets and permanent current assets with long-term debt and equity. Temporary current assets should be financed with current liabilities (Cooley, 1994, 412-414). To allow management to utilize the principle, they need to understand the critical difference between permanent and temporary current assets. Permanent current assets are the base level of current assets that do not change from season to season. Temporary current assets, by contrast, are more variable, e.g. due to the seasonal volume of sales.

To illustrate the options with three alternative working capital policies – aggressive, moderate and conservative, I shall use the approach presented e.g. by Brealey & Myers (1996) and Cooley (1994). They present the asset levels and needs of a company over time. (Figures 5 and 6).

Figure 6: Aggressive working capital policy

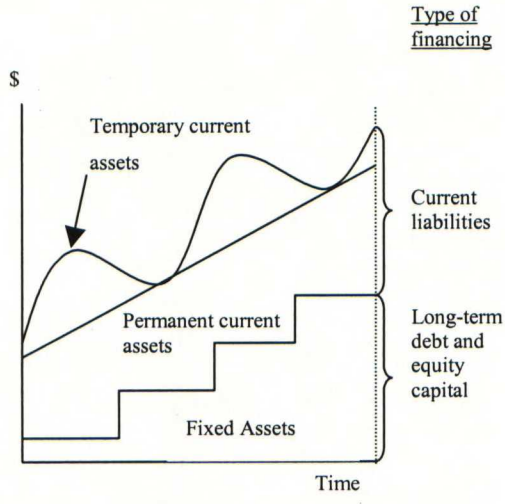
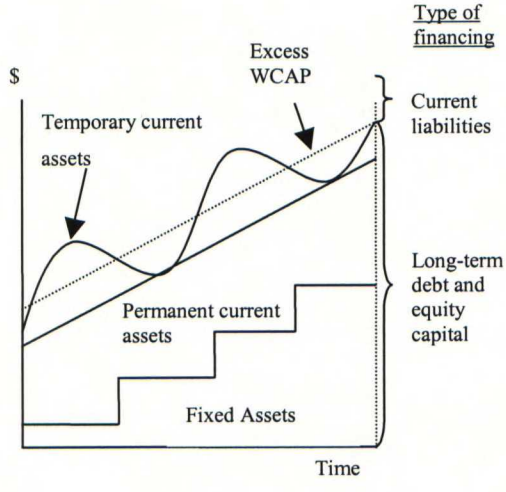


Figure 7: Conservative working capital policy



Under the aggressive WCAP policy, current liabilities are also used to finance a large part of permanent current assets. The conservative approach, on the other hand, relies on holding excess working capital and using long-term debt and equity to finance a part of temporary current assets as well. The conservative approach offers more buffer for turbulent environment and changes in the production or sales levels but at times has excess working capital invested in company operations.

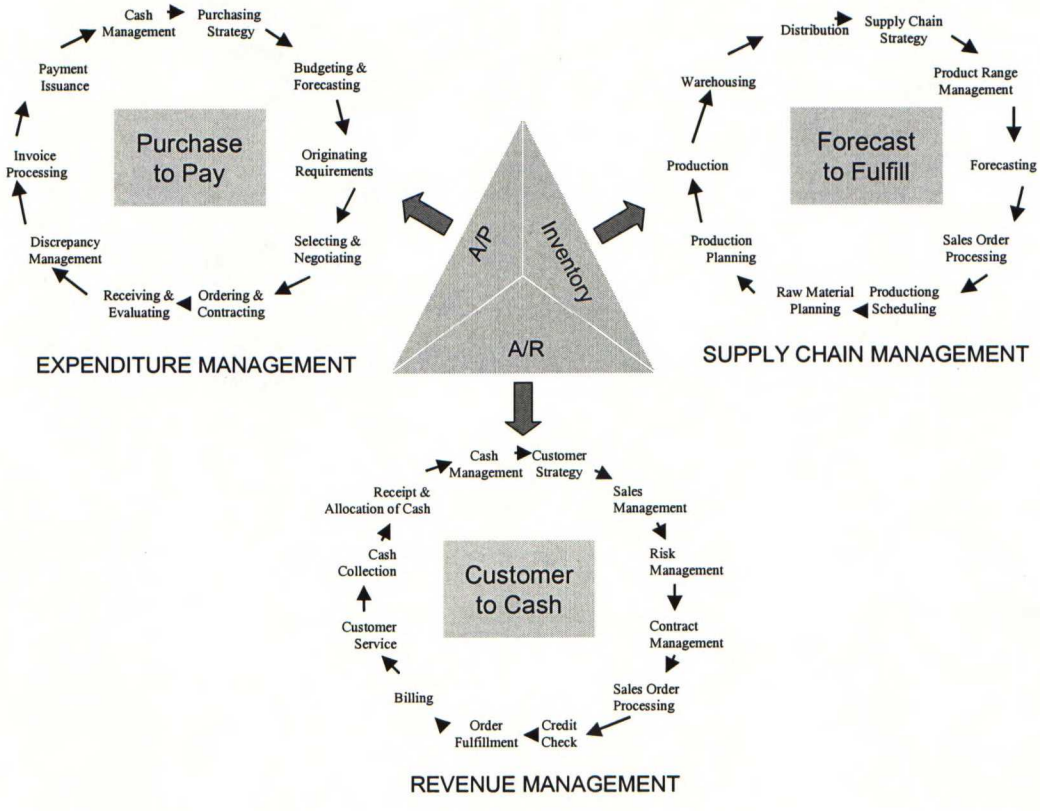
When choosing the working capital policy, a company must also be aware of the risk of overtrading (also called under capitalization). The overtrading situation occurs when a business has insufficient finance for working capital to sustain its level of business. The most common cause of overtrading is failure to match increases in turnover with appropriate increase in finance for working capital (Arnold, 1998). In practice this means e.g. a situation where a company's sales are increasing rapidly but the actual cash coming in is not sufficient to pay the suppliers or the labor force on time.

The latest approach to improve company working capital handling, adopted by several consultancy companies and a number of corporations, is to use a concept called Total Working Capital Management (TWCM)[1]. TWCM approaches working capital management

[1] Total Working Capital (TWC) is service marked by REL Consultancy Group

from the total company process point of view. TWCM aims to manage the working capital by focusing more on the operational level processes and by incorporating all business processes and transactions involving customers, suppliers and products. TWCM splits the WCAP management to three components: the Customer-to-Cash (CTC, C2C) cycle (sometimes referred to as the Order-to-cash, OTC or O2C, cycle), the Purchase-to-Pay (PTP, P2P) cycle, and the Forecast-to-Fulfill (FTF, F2F) cycle. Figure 8 shows the total working capital management concept as presented by REL Consultancy (2003).

Figure 8: Total Working Capital Management (TWCM)



Implementing TWCM in its full scope requires a full analysis of company operations and usually results to a change in working practices and processes outside the area of finance and accounting as well. The whole change process has been reported to give dramatic improvements in the company performance, e.g. reduction of 20-40% in days sales outstanding (DSO) (REL consultancy, 2003).

The next chapters shall discuss the elements of working capital based on the grouping in the company balance sheet.

2.2. Current assets

2.2.1. Cash and marketable securities

One basic element of managing current assets is cash management. Since cash and marketable securities are in modern banking so close to each other, managing cash almost inevitably means managing marketable securities. Arnold (1998, 567) states the three motives for holding cash (the first three in the list below). His three stated motives for holding cash are complemented by Cooley (1994, 438-439) who adds three additional considerations for holding cash reserves.

1. Transaction motive – cash is needed as a buffer to match cash outflows and cash inflows
2. Precautionary motive – forecasting future cash flows is subject to error and forecasting errors need to be prepared for
3. Speculative motive – unexpected profitable opportunities might arise and need to be taken immediately
4. Purchasing power risk – sometimes called inflation risk. Even in the case of zero inflation, idle money always has an opportunity cost of not investing the cash elsewhere
5. Planning balance – cash held for planned big cash outflows e.g. investments
6. Compensating balance – companies may be required to hold compensating balances in a bank e.g. as a precondition for a loan

The challenge is to define what is the appropriate level of cash to be held for ensuring smooth company operations and, at the same, time ensuring the most profitable use of company capital.

Regardless of the company motives for holding cash, it is important to note that all cash management starts from cash planning and budgeting. Cash budgeting is the process of forecasting cash outflows and inflows, and as such it is the centerpiece of cash management. In cash budgeting, a company needs to take into account the cash flow timeline and the

uncertainty of cash flows. Preparing merely one cash budget or forecast without any sensitivity analysis or alternative options is likely to turn out to be less beneficial for the company. Brigham & Houston (1998, 626-629) suggest five methods for effective cash management. These are:

1. Synchronizing cash flows, i.e. the company receives payments approximately the same time it pays the bills.
2. Speeding up the check clearing process and using float[2]. These are not truly applicable ways in Finland because virtually all business is handled without checks and there are only limited number of ways to reduce the time spent for clearing check payments or reducing float
3. Accelerating collections, i.e. finding a way to minimize the time between the customer's payment and the company's receipt. In Finland this also has virtually no effect because the money is available for the receiver to use in a few hours' or even minutes' time after the payment is made
4. Getting available funds where they are needed, i.e. the transfer of funds between different accounts.
5. Controlling disbursements, i.e. payments to debtors. This could mean e.g. slowing down payments to suppliers.

Similar techniques are also presented by Van Horne (1995, 372-381) and Sagner (1997), but in their discussions considerable emphasis is also put on "playing float", i.e. accelerating check clearance. There are several options for doing this, e.g. faster collection, faster mailing or personal check deliveries, check processing time reduction, etc. Nowadays when the banking system is moving more towards electronic banking, electronic commerce (eCom) and electronic data transfer (EDI), the importance of "playing the float" is diminishing. In the case of Finland, especially when dealing with domestic customers, using checks is virtually nonexistent and hence, the most useful ways for Finnish companies to improve their cash management seem to be improving their cash planning and forecasting, synchronizing cash flows, mobilizing funds, speeding up collections and controlling disbursements.

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[2] Collection float time = time required t collect cash after a customer issues a check, Disbursement float time = Time required for a payer's bank to reduce the checking balance after the payer issues a check

In addition to controlling pure cash, it is also important to consider the investment of idle cash. A balance between cash and marketable securities and other liquid short-term investments should be found. By determining the optimal level of cash it is possible to adjust the amount of cash by selling or buying marketable securities. A number of theoretical cash management models have been developed. The two best-known models are William J. Baumol's (1952) deterministic model, which applies the Economic Order Quantity model to cash management, and Miller-Orr's (1966) stochastic model, which takes uncertainty of the demand for cash into account.[3] When cash flows are not predictable, a probabilistic approach can be used in determining the company cash needs and balances. In this case, estimated cash flows for each possible future outcome are used to form a probability distribution and this probability information is used to derive the optimal level of cash.

There are a number of instruments available for cash investments. The selection of suitable instruments can be done using e.g. yield curve where the maturities and the yields for alternative investments are plotted to one graph. (Seidner, 1990). Further explanation of the available instruments for liquid short-term investments are left out of this study.

2.2.2. Accounts receivable

After goods or services are sold, accounts receivable is created. The first step of managing receivables is to decide whether to grant credit or not. A firm's credit policy is a set of decisions that include the firm's credit period, credit standards (required financial position of acceptable credit customers), collection procedures and discounts offered for early payment (Brigham & Houston, 1998, 638). Credit policy alone, however, is not the reason to accept or reject an account. Various sales aspects should also be considered. These include, for example, the size of a new customer, possibility of future gains resulting from the business with the new customer and the company's objectives regarding market share.

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[3] See e.g. Brealey & Myers (1996) and Arnold (1998) for more detailed explanation.

There are a number of possible approaches to rate acceptable credit customers. Van Horne (1995, 412) suggests a simple three-step-approach for evaluating the credit applicant:

1) Obtain information on the applicant
2) Determine credit worthiness and
3) Make credit decision.

For obtaining the information Van Horne (1995, 413) suggests the target company's financial statements, credit ratings and reports (made by e.g. Dun & Bradstreet), bank checking, trade checking, and, of course, the company's own experience. Cooley (1994, 473-473) notes that one commonly used method for rating and evaluating the prospective customers is to use the "five Cs of credit": Character – the moral fabric of a borrower, Capacity – the ability to pay, Capital – the applicant's equity, Collateral – assets pledged as a promise of repayment and Conditions – special circumstances. Although straightforward in principle, difficulties in determining the customer's credit potential might arise when credit for small or medium sized customers is under consideration. The cost of obtaining information may sometimes be relatively high and the cost of collecting information should not outweigh the benefits of the information. Current business practices in Finland largely force companies to grant credit to their regular customers.

Another major decision concerning receivables is the issue of discounts. Discounts are usually used in order to steer customers' behavior. The purpose of e.g. cash discounts is to encourage customers to pay their bills earlier than they would normally do. Offering discounts can be used as a way for short term financing, but it is usually a very expensive source of financing. For example, offering a customer credit on terms of "2/10, net 30" would mean that the company borrows money at the nominal interest rate of 36.7 %. This can be calculated as follows:

Nominal annual cost

$$= \frac{\text{Discount percent}}{100 - \text{Discount percent}} \times \frac{360 \text{ days}}{\text{Days credit is outstanding - Length of discount period}} \quad (1)$$

$$= \frac{2}{98} \times \frac{360}{20} = 2.04\% \times 18 = 36.7\%$$

The nominal annual cost formula does not take account of compounding. The effective annual cost of credit is even higher, i.e. $(1.0204)^{18} - 1.0 = 43.9\%$. If the company can borrow money, e.g. from a bank, with an interest rate below this, it should not offer trade credit with the mentioned terms (Brigham & Houston, 1998, 667-668; Cooley, 1994, 476). An additional issue to consider is the customers' reaction to the credit terms. It might happen that the customers are not willing to do business without cash discounts. The similar approach can also be used to evaluate what the impact of customers paying later than their agreed terms of credit is. The concept of nominal annual cost presented above can also be applied to managing accounts payable when calculating whether to use the offered cash discount or not.

There are several ways to monitor a company's accounts receivable position. For each of the measures there exist different practices in calculating the measured value. The measure can be derived from aggregated data (e.g. monthly data) or it can be derived from the atomic level data (e.g. invoice by invoice). One important measure is the amount of receivables which on average and in a stable business position is calculated as

Accounts receivable = Credit sales per day x Length of collection period (2)
(Brigham & Houston, 1998, 638).

Another commonly used measure is the accounts receivable turnover which is calculated as

Accounts receivable turnover = Credit sales / accounts receivable (3)
(Cooley, 1994, 479)

Accounts receivable turnover can be used as a measure for the customers' usage of cash discounts. If the customers stop taking cash discounts because of relatively higher borrowing rates, the AR increase and AR turnover decreases.

The total amount of receivables does not reveal anything about the time to which money is tied-up in receivables. For this purpose one of the most commonly used measure is Days Sales Outstanding (DSO), sometimes referred to as the Average Collection Period (ACP). DSO is the average length of time required to collect credit sales, and it can be calculated as follows:

DSO = average receivables / average credit sales per day (4)
(Brealey & Myers, 1996, 772)

In U.S. companies DSO varies between 30 and 60 days, depending on the industry practice (Sagner, 1997). Given that check sales are not used in Finland, the DSO in Finland should in general be lower than in U.S. The DSO can also be calculated in other ways, e.g. as a weighted average of the receivables aging. The results with different calculation methods might differ, but the underlying information that the ratio conveys has the same meaning.

The third commonly used method to monitor receivables is to use an aging schedule which shows how long accounts receivable have been outstanding. If a company experiences strong seasonal variations or is growing rapidly, both the DSO and the aging schedule may be distorted. With rising sales, the average collection period and the aging will be more current than if the sales are level. This is due to the fact that a greater portion of sales is currently billed.

The fourth approach may be used to avoid the above problem associated with the aging schedule and rising sales. The receivable collection matrix separates changes in the payment behavior from changes in the pattern of sales. (Table 1) The matrix indicates the amount of credit sales in a given month and the months when the receivables so generated are collected. (Van Horne, 1995, 764-766)

Table 1: Conversion matrix of credit sales to cash

Month	Credit Sales	Monthly collections											
		Jan.		Feb.		Mar.		Apr.		May.		Jun.	
Oct.	6,000	600	10 %										
Nov.	4,000	900	23 %	300	8 %	125	3%						
Dec.	3,000	1,400	47 %	700	23 %	400	13 %						
Jan.	5,000	700	14 %	2,500	50 %	1,200	24 %	600	12 %				
Feb.	6,000			900	15 %	3,200	53 %	1,500	25 %	400	7 %		
Mar.	7,000					1,200	17 %	3,300	47 %	1,900	27 %	600	9 %
Apr.	8,000							1,100	14 %	4,100	51 %	1,900	24 %
May.	7,000									1,300	19 %	3,300	47 %
Jun.	5,000											700	14 %
Tot. collections		3,600		4,400		6,125		6,500		7,700		6,500	

The percentages are in relation to credit sales shown in the second column.

One important part of accounts receivable control is the company collection practices. By dedicating an appropriate amount of effort to collection operations, a company can avoid extensive aging receivables and speed up the collection process, hence reducing the amount of working capital. At the same time the company is also likely to reduce bad debts and reduce the default risk. A company should collect receivables approximately within the allowed credit period. The expected present value of an aging receivable will decline dramatically after 60 days (Cooley, 1994, 481). One option available for especially the large companies to speed up collections might be to use the so-called captive finance company, a company within their own company structure that specializes in credit collections. A natural option might also be to use specialized credit collection agencies.

2.2.3. Inventories

Holding large inventories has many benefits that are related to sales, customer service and production efficiency. A company can fill customer orders more quickly, and it can take advantage of quantity discounts or benefits from large production rounds. Disadvantages include the cost of holding an inventory, required return on capital tied up in the inventory and the danger of obsolescence. Managing inventories also means managing inventory costs which include carrying, ordering, stock out (e.g. lost sales due to an inventory item not being available), shipping, and receiving costs.

A basic model for optimizing inventory costs is the previously mentioned EOQ-model. The model is based on the forecasted use of a particular inventory item, known ordering and known carrying costs and it aims to minimize the sum of carrying and ordering costs. The model states that economic order quantity (Q*) can be calculated as follows:

$$Q^* = \sqrt{\frac{2SO}{C}} \tag{5}$$

where,

S = the total usage (in units) of an item of the inventory for the given period

O = ordering costs per order

C = carrying cost per item

In its basic form EOQ-model does not take uncertainty into account, but the model can be applied to the case where a company decides to hold a safety stock. The model can also be modified to a situation where quantity discounts are taken into account.[4]

Inventory can, and should, be analyzed in detail, since it constitutes a major part of the company working capital in manufacturing industries. The considerations should include e.g. inventory rotation and turnover, ordering quantities and usage, shipping and delivery dates and planning, levels of safety stock and working practices. To allow for sophisticated and computerized inventory control, several inventory control systems have been developed in the marketplace. The systems range from simple inventory programs to large company-wide ERP systems which are linked to all company operations and approach the total supply-chain management. More detailed discussion of inventory management is left outside this study.

2.3. Current liabilities

Current liabilities refer to the company's short-term sources of financing. They comprise of short-term loans, accounts payable (trade credit financing) and other current liabilities. Money market credit, i.e. commercial papers and bankers' acceptances, can also be included in this

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[4] For more detailed presentation of the EOQ-model, see e.g. Van Horne, 1995 or Brealey & Myers, 1996

category. Current liabilities can also be grouped to spontaneous (accounts payable and accrued expenses) and negotiated (money market credit, unsecured loans)

2.3.1. Short-term loans

Van Horne (1996, 454) divides short-term loans into two categories: unsecured and secured loans. It is not very usual that finance companies offer unsecured loans because the customers who need them can borrow the money at a lower cost from a commercial bank. Thus, when I talk about unsecured loans, only commercial banks are involved.

One form of unsecured loans is a line of credit where the bank and the customer agree on the maximum amount of unsecured credit the bank will permit the firm to owe at any one time. The amount of credit is based on the bank's assessment of the credit worthiness and the credit needs of the borrower. Another type of unsecured credit is a revolving credit agreement. In this case, a bank is committed to extend the credit to a certain maximum amount. For the possibility to use this extendable credit, the borrower is usually required to pay a fee for the unused portion of the credit. Revolving credit agreements frequently extend beyond one year and can therefore also be regarded as intermediate financing. (Van Horne, 1995, 455-456)

In secured lending agreements, the lenders have two sources of loan payment, the cash flow ability of the firm to service debt and, if that fails, the collateral value of the security. One example of this is the assignment of accounts receivable (or pledging receivables). The lender will analyze the quality of the firm's receivables to determine how much to lend against them. The higher the quality of the receivables, the higher the percentage to be lent against the face value of the receivables. The cost of the service comes in the form of a higher interest rate and a service fee. (Van Horne, 1995, 464-466)

Factoring receivables is quite close to the assignment of accounts receivable. When a company factors its receivables, it actually sells them to a factor. A company can usually get rid of the cost of maintaining a credit department and making collections when it uses factoring as a source of financing. Naturally, the factor requires a compensation of the services and typically this compensation is somewhat over 1 percent. In a factoring agreement, the parties also agree on whether the factor pays the agreed amount on the day the

receivables are due or sometime before that. If the payment is made before the due date, interest must usually be paid. (Van Horne, 1995, 467-470) In Finland, factoring has traditionally had a negative status. It has been seen as one of the last ways of improving the company's liquidity. This could be one reason for the inactive use of factoring in Finland.

The third way to arrange secured short-term loans is to borrow against the inventories. The lenders decide "...the percentage that they are willing to advance by considering marketability, perishability, market price stability and the difficulty and expense of selling the inventory to satisfy the loan." (Van Horne, 1995, 470). There are a number of case specific procedures[5] that can be used when borrowing against the inventory, but these are outside of the scope of this study.

2.3.2. Accounts payable

Accounts payable (or trade credit) usually creates the largest source or the company's short-term financing. From the company's point of view, using trade credit as a way to finance the operations is the exact opposite of accounts receivable. Even the cost of using / not using the offered cash discount can be calculated the same way as presented in chapter 2.2.2. There are three types of trade credit financing: open account, notes payable and trade acceptances (Van Horne, 1995, 446). Since open account is, by far, the most common type of trade credit in Finland, it is the only type discussed in this context.

Doing business with an open account highlights the importance of the terms of sale. A company can decide to use COD (cash on delivery) or CBD (cash before delivery) which both allow no extension of credit to the customer. These terms are very useful when the company manufactures e.g. buildings and large amounts of money are tied up in work in progress. They are also frequently used with customers with low credit potential.

Other terms of sale for open account transactions include a net period with or without cash discount and datings. The "net period" terms depend very much on the seller's need for money, since cash discount is usually offered as an incentive to the buyer to pay early. In Finland using cash discounts is not very common, and its importance as a way to speed-up collections is diminishing. Datings are frequently used in seasonal (e.g. clothing) industry,

[5] see e.g. Van Horne, 1995, 470-473

where buyers are offered long periods for payment of their purchases. In datings, the customers are asked to place their orders well in advance of their selling peak and the seller allows them to pay the goods when they actually begin the selling of the products. In this case, the seller can smooth the production peak and he does not have to store the finished goods inventory. (Van Horne, 1995, 447-448)

When companies organize their short-term financing with trade credit, they should naturally make the maximum use of it. They should either pay their accounts payable exactly at the end of the discount period or at the end of the net period but not in the time between. If a company misses the offered cash discount date, it should not pay the bill immediately but invest the money until the last day of the net period. Example 1 illustrates this.

Example 1:

> Should a company decide not to use the offered cash discount (terms: 2/10, net 30), it faces an opportunity cost of 36.7 %, as calculated using equation (1) in chapter 2.2.2. If the payment is made e.g. five days after the discount date, the denominator of the latter part of (1) will be 360/5=72 and the nominal opportunity cost would be 146,9 %. Hence, the cost of giving up the discount is minimized when the payment is made on the due date.

A company can also stretch, or postpone, the accounts payable beyond the due date. There are, however, some limits to this kind of arrangement. Excessive postponing could cause the company to lose its good credit rating and force it to pay a higher interest on the loans. It may also encourage the suppliers to insist on stricter terms of sale. However, at least to some extend, stretching payables is not a bad thing to do. If the stretching is needed only on periodic basis, most suppliers are willing to do so provided that they are informed well in advance. The cost of postponing payments is difficult to measure due to the unpredictable reaction of suppliers to the postponement. The costs should be evaluated carefully to determine whether stretching really is a reasonable option or not. (Van Horne, 1995, 451)

2.3.3. Other current liabilities

Other current liabilities include accrual accounts, of which the most common ones are wages and taxes. Accruals represent, in a sense, costless financing: they are not expected to be paid until the due date. Thus, they represent a type of an interest-free source of financing. By changing the frequency of salary payments, the company can affect the amount of financing. For example, if the company increases its pay period for wages from 1 week to 2 weeks, it increases the average amount of accrued wages by 200,000 and vice versa. (Assuming a weekly payroll of 400,000 with an average amount accrued of 200,000). From this perspective, as long a pay period as possible would be preferable for a company. This is, however, not always possible due to e.g. legislation, union pressures and prevailing business practices. (Van Horne, 1995, 451-452)

2.4. International working capital management

International companies face more complex tasks in managing working capital than companies operating only on domestic markets. Additional dimensions to consider are e.g. currency exchange rates and risks, international banking practices, the speed of international transactions, communication between several entities, different legislations and taxation and different cultural characteristics. Political, tax and liquidity constraints together with foreign exchange transaction costs impose significant limitations on the assumption that funds could be transferred easily and without cost between company entities.

According to Eitemann, Stonehill, Moffett (1995, 600), payment of dividends is the most common way firms transfer funds from affiliate to parent. The determinants of dividend policy include tax considerations, political risk, foreign exchange risk and other less important factors, e.g. age and size of the foreign business or possible local joint ventures. Other common ways to transfer funds are royalties, fees and home office overheads. These are used either as remuneration for technology and patents (royalties), compensations for professional services and expertise (fees) or as a charge to compensate general management or international operations expenses that the operating units must compensate (home office fees). All these are usually predetermined through out the whole company as e.g. a percentage of sales or fixed yearly charges.

In all of the alternative options to transfer funds internationally, the company must consider the possible tax implications. In several countries, e.g. fees and royalties are locally tax deductible but dividends are not. In the tax considerations, companies also usually evaluate the effect of bundling versus unbundling the compensation to parent company. If all charges are bundled together, there is a risk that all payments are considered e.g. as a dividend, and hence no tax deductions on e.g. royalties can be made. In the case of unbundling, the charges are separated from each other and treated separately in the taxation questions. (Eitemann, Stonehill, Moffett, 1995, 603) The company must also be aware of the legal aspects in both origin and destination countries in order to avoid any possible accusations of tax evasion.

A highly sensitive topic within multinational companies is the question of transfer pricing. Establishing the rational and justified method for pricing the transfer of goods, services and technology between affiliates is found to be difficult even for domestic entities, let alone international companies. In the multinational cases, emphasis must also be placed on the fund positioning, income taxes, managerial incentives, performance evaluation and joint ventures. As a practical example, companies might consider managing worldwide profits by setting the transfer prices to minimize the taxable income in a high income tax country and maximize the taxable income in a low income tax country. (Eitemann, Stonehill, Moffett, 1995, 605; Shapiro 1996, 426-431)

Management of international cash balances can benefit from both centralized depositories and multilateral netting. In the centralized depositories, local affiliates are only allowed to hold only a minimum cash balance for transactional purposes, unless centralized management allows exceptions to this policy. All excess funds are remitted to the central depository, which then places the funds in a way that best serves the company as a whole. Modern day banking allows reasonably fast and reliable electronic transactions and the central depository can also quickly return the funds to the local company in case it is urgently needed. Centralization also brings benefits by reducing the total company cash balance held for precautionary purposes without lessening the level of protection (Eitemann, Stonehill, Moffett, 1995, 615-616). Multilateral netting is useful when a large number of separate foreign exchange transactions occur between affiliates in the normal course of business. Netting reduces the total cost of settlement that would otherwise consist of a large number of spotting transactions.

Cash planning and budgeting becomes more and more important in multinational companies. The cost of making international transfers is usually higher than domestic transfers and managing the global cash pool requires resources. The cost of correcting one erroneous international transfer (e.g. cash denoted in a wrong currency) can be minimized by the use of a multinational cash forecasting/planning system. In the ideal case, companies would have a central on-line view of all the affiliates' cash accounts, balances and forecasts.

Managing accounts receivables (AR) in international business can be categorized to two types of transactions: sales to related affiliates (the so-called inter-company transactions) and sales to independent buyers having no ownership relations with the selling firm. Within-family (or inter-company) transactions are usually managed through leads and lags and through re-invoicing centers. Managing the AR of independent customers in international business follows the same principles as described in 2.2.2. The main differences are the invoicing currency and terms of payment. In domestic transactions the used currency is usually the local currency, whereas in international transactions the currency is decided either according to the competition or custom, but frequently this is also the result of negotiations between the buyer and the seller. The payment terms are usually also a negotiated item. However, to reduce the exchange risks, the seller should prefer to negotiate the terms of payment in a way that the payment in weaker currency is collected faster. (Eitemann, Stonehill, Moffett, 1995, 623; Shapiro, 1996, 365) lists five principal means of payment in international trade, ranked in terms of increasing risk to the exporter: 1) cash in advance, 2) letter of credit, 3) draft or bill of exchange, 4) consignment and 5) open account.

In some of the global companies, the financing needs have become too extensive and complex for any one commercial bank to handle without having the detailed information on the operations as well. This has resulted in the establishment of the so-called in-house or internal banks. They are not necessarily separate entities but usually a set of functions performed by the existing treasury department. The aim for the in-house bank is to provide banking like services for the various units of the firm with a lower cost and/or more expertise than the commercial banks. (Eitemann, Stonehill, Moffett, 1995, 625)

Inventory management in global companies has the similar dimensions to the international AR/AP and cash management. Centralizing inventories creates benefit in reduced total levels of inventories. The same way as in cash management, centralized inventories require

sophisticated knowledge on the demand for inventory items to allow for rationalized inventory management. On the other hand, in the case of a likely local currency devaluation, companies might decide to build up inventory of imported items in anticipation of the expected devaluation. (Eitemann, Stonehill, Moffett, 1995, 627-628)

For multinational companies there are also other means to raise funds from their affiliated companies. Shapiro (1996, 346-347) describes three short-term financing options that might be available for a multi-national corporation: 1) Inter-company loan, 2) currency loan and 3) Euronotes and euro commercial paper.

2.5. Measures for working capital performance

In addition to the metrics presented in above sections, several other measures are used to monitor and evaluate the working capital performance in a company. The most traditional ones are Current Ratio (CR) (sometimes called the liquidity ratio) and Quick Ratio (QR) (sometimes called the acid test). Current ratio measures current assets over current liabilities i.e, CR=CA/CL and is a measure of the company financial strength and liquidity. It measures the company solvency, i.e. the ability to meet obligations as they come due. A rule of thumb says that a CR of two, ratio of 2:1, is considered to be borderline healthy. Industry impact naturally needs to be accounted for, e.g. in industries where no inventory is held, the level of current assets is likely to be lower and hence also CR lower. The quick ratio gives even a stricter measure for working capital performance. CR takes into account only those parts of the company assets that can be converted into cash in a very short time frame. The quick ratio is calculated as QR= (CA-Inventories)/CL and 0.5-1 is considered to be a satisfactory level for most businesses. (Gates, 1994, 52-53) Both of these are also used as an indicator of the company solvency and could hence be used in evaluating a potential credit applicant as well.

When measuring how effectively a company's working capital is used to generate and process sales, the turnover of working capital is often used. It is measured by dividing net sales by working capital (net sales / working capital). Maintaining the ratio at a low value ensures availability of cash to sustain operations, but this may be inefficient use of funds. Gates (1993, 57) notes that median values for WCAP turnover range from 2 to 18, given the industry in question.

In the context of total working capital management (TWCM), described in chapter 2.1, it has been mandatory to look beyond the traditional accounting measures. The speed of change in the business environment has also forced both companies and consultants to find new, more appropriate measurements for working capital. REL consultancy proposes e.g. the below measures in Table 2 to be considered when going through the TWCM process:

Table 2: Suggested measures for TWCM processes

Purchase to Pay	Forecast to Fulfill	Customer to Cash
▪ DPO - Days Payables Outstanding ▪ Payables Balance ▪ Best possible DPO ▪ Percent early payment and percent payment to terms ▪ Percent spend via corporate agreements/contracts ▪ Spend by category ▪ Spend by customer type/segment ▪ Spend per functional FTE ▪ Transactions per functional FTE ▪ Transactions per supplier ▪ Spend/Sales ratio	▪ DIO - Days Inventories Outstanding ▪ Inventory turns ▪ Delivery service levels ▪ Service levels ▪ Cash-to-cash cycle times ▪ Lead times ▪ Response times ▪ Fill rates ▪ Inventory management costs ▪ Rate/productivity of value add ▪ Returns rate and costs	▪ DSO - Days Sales Outstanding ▪ Best possible DSO ▪ Credit note - invoice ratio ▪ Percent of invoices in dispute by category ▪ Dispute resolution lag time ▪ Aging and AR rollover rate ▪ C2C functional headcount ▪ Pareto analysis of customer base ▪ Number of transactions by customer ▪ Transaction type per FTE

Each of the measures above looks at a specified item in the working capital elements. Some of the measures are traditional, but the increasing speed in the business environment, e.g. increased speed for handling transactions and a faster phase in changing business trends, calls for shorter measurement intervals. The need for a large number of measures together with fast and reliable data can be achieved through sophisticated IT systems where information from various sectors of the organization can be easily processed and combined.

3. Previous research

Previous research on the working capital management and related cash management appears to be split to mainly three groups of studies: 1) Cash flow and cash budgeting studies, 2) WCAP and cash management as indication of company success and 3) industry impact on WCAP. In this section I shall give a short summary of the studies in each of the area, focusing more on the pure WCAP related studies.

3.1. Cash flow studies

Sartoris and Hill (1983) present a generalized approach to short-term financial decisions. They examine the net present value (NPV) concept of an investment in working capital and cash flow items (e.g. ordering inventory), incorporating the interactions between working capital elements. They build on the model developed by Lieber and Orgler (1975) and expand the model towards a more generalized approach. Sartoris and Hill present the cash flow framework under certainty by letting the level of sales follow a predefined function e.g. due to the seasonality of sales. They also incorporate the element of fixed costs to the NPV calculations and later incorporate uncertainty modeling to the same integrated working capital approach. They suggest three methods for dealing with uncertainty: simulation, explicit pricing using e.g. a derivative of CAPM and neutralization by setting up policies to neutralize the risk. Sartoris and Hill propose that instead of the traditional compartmentalized WCAP decisions a company benefits from adopting an integrated approach to working capital management. This approach is supported by the modern concept of Total Working Capital Management – TWCM (presented in Chapter 2).

Kroll (1985) investigates the differences between accrual accounting figures and cash flows and how to calculate the cash flow and NPV correctly with or without starting investment in working capital. He shows that if the actual cash flows occur only at the beginning or at the end of the accrual accounting period, there is a simple relationship between accrual accounting profit after tax (PAT), the calculated working capital and cash flows. If the accounting period is short (e.g. one month) then the difference might not be too misleading, but with longer periods there is no simple relationship. He suggests that if it is not possible to

obtain the actual monthly cash flows, the cash flows should be converted into the end-of-year equivalent cash flows to compute the correct working capital and NPV.

3.2. Working capital management, company success and profitability

Deloof (2003) investigated the working capital management (WCM) impact on the profitability of Belgian non-financial firms. By measuring the cash conversion cycle, the number of accounts receivable, inventories and accounts payable as measures of working capital management and gross operating profit as a measure of profitability, Deloof analyses the correlation of the WCAP components and profitability. He also uses regression analysis to investigate the impact of WCM on corporate profitability. He finds a strong negative relationship between operating income and the number of days AR, inventories and AP of Belgian firms. He concludes that managers can create value for their shareholders by reducing the number of days AR and inventories to a reasonable minimum.

Shin and Soenen (1998) find a strong negative relation between cash conversion cycle and corporate profitability for a large sample of American listed companies for the period of 1975-1994. This result indicates that managers can create value by reducing the cash conversion cycle to a reasonable minimum. Deloof's (2003) finding seems to support those of Shin and Soenen's (1998)

Jose, Lancaster and Stevens (1996) examine the relationship between profitability measures and management of ongoing liquidity needs for a large cross section of firms over a twenty-year period. They use the cash conversion cycle (CCC) as the measure of ongoing liquidity management. Profitability is measured by ROA, instead of ROE, to focus on operating efficiency and avoiding capital structure differences. However, the authors also use ROE to separate the asset management and financing influences on profitability. Industry influence is controlled by conducting the analysis for each of their seven different classified industries. To control the impact of the company size, they split the sample to size categories based on the volume of sales. The paper offers strong evidence that aggressive working capital policies enhance profitability. As a whole, the lower the CCC, the more profitable the company is. This applies to several industries, including natural resources, manufacturing, service,

retail/wholesale and professional services. For these industries there exists a significant inverse relationship that is not impacted by size.

3.3. Industry impact on working capital

Hawavini, Viallet and Vora (1986) investigated the industry impact on working capital decisions. Their starting position is that within an industry, the working capital requirement to sales ratio should be similar, but it should differ between industries. They introduce a concept of Working Capital Requirement (WCR). They reformulate the basic net working capital formula NWC = Current Assets – Current Liabilities = [C+AR+INV]-[STB+AP+NA] to be

$$NWC = [(AR+INV)-(AP+NA)]+[C-STB] = WCR + NLB \quad (6)$$

and further to

$$WCR = NWC- NLB. \quad (7)$$

Where,

C= cash and marketable securities

AR = Accounts receivable

INV = Inventories

STB = short term borrowing

AP = Accounts payable

NA = short term net accruals

WCR = working capital requirement

NLB = net liquid balance

Hawavini, Viallet and Vora (1986) use the WCR as the accounting measure to define how much capital a company has tied up in its operations. They state that the WCR may even be negative for certain companies mostly in retail and service industries. They also group the companies in their sample to 36 industries based on their four-digit SIC industry codes and measure the WCR to sales ratios for US companies over the period of 19 years. They find that there is a significant industry effect on firms' investment in working capital and that this effect persisted during the 19 years covered in the study. Their results are also consistent with

the notion that there exist industry benchmarks to which firms adhere when setting their working capital policies.

4. Case description

The case company is a part of a publicly listed international logistics corporation. The company has operations in over 220 countries all over the world, and it employs some 380,000 people worldwide. In Finland, the company has been active since the beginning of the 1980's and currently it employs over 1,500 persons in Finland. Due to confidentiality issues, the company's and the employees' names are not mentioned in the study as requested by the Finance Manager.

During the last three years the case company has gone through major restructuring in its company structure and working practices. During this time, a number of key people who had been working in the company for several years in the same position have also either moved within the company or outside the company. This has resulted in a situation where, on the one hand, a significant amount of past knowledge has disappeared, but on the other hand a large number of new ideas and ways of thinking have been coming in to the company.

Due to the size of the company, it is absolute necessary, for global control and optimizing purposes, to have worldwide policies for most of the practices conducted in the countries. Therefore, when looking into the working capital management practices in the case company, it is not surprising to find out that the global company-wide policies to a large extent define what kind of working capital management can, and should, be practiced in an individual country organization. Restrictions have been placed e.g. to the investment of excess cash, and policies for e.g. credit control have been established. Differences between countries' business practices have, however, forced the policies to allow for some room for country organizations to decide how the practices are actually carried out. There is also a clear requirement from the case company global accounting and controlling that all countries must have up-to-date working capital policies and the policies must be followed. In this study the working capital management is described from the perspective of Finland's country organization.

5. Data and methodology

5.1. Data

The case company data used in the study is from the in-depth interviews conducted with the case company personnel and from the internal databases and systems of the case company. The case company data is gathered from:

- Balance sheet data
- Existing reports of working capital elements performance
- Company customer register
- Company A/R and A/P data
- Company Working capital and credit control policies (old and new)
- Company Treasury policy (old)
- Interviews

The data for balance sheet analysis is from the publicly available information to ensure that no confidential pieces of information are presented. The analysis data used in the detailed analysis of customers and AR and AP is extracted directly from the current company systems. The case company has currently several systems in use for AR and AP data and hence all of the data is not available in a harmonized format. Whenever possible the atomic level data is used and converted to a harmonized format. In the interviews, the old and new working capital policies work as key documentation from the case company.

5.2. Methodology

The case study is conducted by doing an operational audit of the case company's current working capital management. The methodology used in the case study is divided into two parts

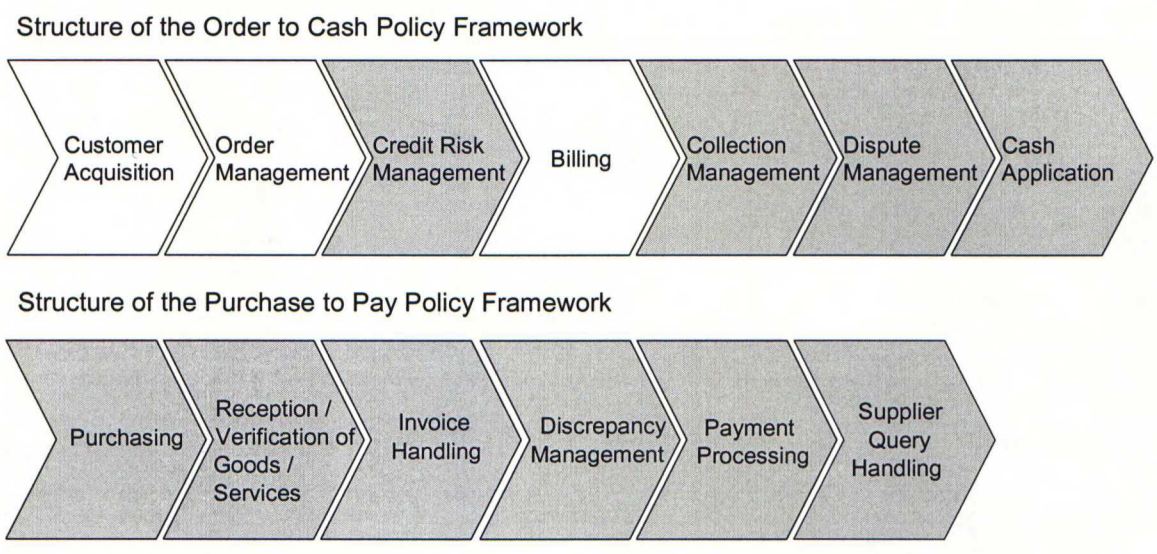
- Qualitative (interviews) on the current practices, WCAP policy, measures and implementation

- Quantitative actual case data for monitoring the WCAP elements past and current performance

As requested by the case company, much of the focus is placed on conducting a gap analysis of the current working practices versus the new required WCAP management practice. The staring point is the new global WCAP, Order-to-Cash and Purchase-to-Pay policies which are then evaluated against the current actual practice in the case company. The evaluation is based on the interviews.

The case company takes a slightly different approach in defining the OtC and PtP processes than described above in the theory section. The new policies in the case company also limit the focus to the specific parts of the respective WCAP management policies (e.g. Order-to-Cash policy does not touch the "Customer Acquisition" or "Order Management" sections, but focuses heavily on the "Credit Risk Management" and "Collection Management"). Figure 9 presents the case company definition of Otc and PtP processes. Highlighted areas are the policy focus areas.

Figure 9: Structure of the case company OtC and PtP Policy



Similar logic is used in the interviews. In the interviews with the key personnel who work with WCAP items, I find out the essential information about the case company's WCAP management and identify the gaps between the policies and actual current practices in the company. My interview questions are based on the stated requirements in the global policies

and on the questionnaires presented in the following two articles: "An Operational Audit of Working Capital" by Dale L. Flesher (1989) and "Cash is King" by Leslie N. Masonson (1990). James Sagner's (1997) book "Cashflow reengineering - How to Optimize the Cashflow Timeline and Improve Financial Efficiency" is also used for designing the questions. The questions were open questions to allow the respondents to elaborate and give a more thorough explanation on the given topic. Conclusions and recommendations on the next steps to enforce the policy implementation are made based on the analysis.

I also gather company-specific descriptive numeric data on the policy-related items. This is done to evaluate the evolution and the current stage of the company WCAP management. I mainly focus on the identified key measures for working capital when looking at the data. I shall present the findings by customer segment to allow the case company to build concrete actions where deemed necessary.

6. Analysis and results

In the below sections I shall present the findings of the analysis. The findings are presented in the same order and logic as described in the Methodology section above, firstly I shall present the findings from the interviews, followed by the recommended key actions. Secondly, I shall analyze the current WCAP performance in the case company. The analysis and results chapter is concluded with a section on the working capital measures.

6.1. Interviews and gap analysis

The people interviewed in the case company for this section include

- Head of Finance
- Manager of Billing
- Billing Team Leader 1 (product line 1)
- Billing Team Leader 2 (product line 2)
- Manager of Customer Accounting and Credit Control
- Accounts Payable Supervisor / Finance BPO
- Controller
- Head of Marketing & Sales

- Executive Manager of Sales
- Executive Manager of Key Accounts
- Head of Procurement
- Company Lawyer

All interviews were done with the same interview questionnaire (Appendix 1) where all respondents responded to the general WCAP interview section and to their own area of expertise. For the people who are involved in or responsible for the total WCAP management (e.g. Head of Finance), all sections were covered. Also, if a person felt that he or she had an input to be given to a section directly outside of his/her control, the response was recorded and is used in the analysis. On average the interviews lasted two hours each.

6.1.1. General working capital policy and findings

In the interviews on the general working capital management and the resulting gap analysis between the current practices and the new global policy five main findings were discovered.

Firstly, in all of the interviews it became very clear from the start that the company does not have a clear WCAP management concept in Finland. It seems evident that the management is aware of the new policies but has not read them in detail and hence were not able to take a stand in all of the policy-related questions (e.g. Manager of Customer Accounting and Credit Control, Manager of Billing). The principles of basic WCAP management are known to the management, but this is based on past experience, not on the active involvement in the implementation of new policies. The interviews also show that even though the management is aware of the basic reasons for WCAP management and its importance, the employees in the teams do not share the same level of awareness (Billing Team Leader 1; Billing Team Leader 2). Some of the teams are frequently (e.g. monthly in the credit control team) going through the basic WCAP or supporting WCAP measures related to their own work, but some other teams do not know how their work is even remotely related to WCAP management (e.g. Billing team product line 1). It is also evident that there is no visibility on the total WCAP process and individual elements in it. This is likely to result in a situation where each department sub-optimizes their own work in the expense of the total process and overall profitability. It is also evident that only people working directly with the WCAP concepts

know and understand what working capital management is all about. The rest of the organization seems to be less aware of the working capital concepts and reasons for their importance.

Secondly, the case company does have various very old policies (Luottopolitiikka Company X-a; Luottopolitiikka Company X-b) and working practices that date back to the time before the organizational changes. These policies and working practices have not, however, been updated to reflect the current situation or changed global company policies. As a result, there are only a few individuals who seem to have a holistic view of the e.g. Order-to-Cash (Manager of Customer Accounting and Credit Control; Controller) or Purchase-to-Pay (Accounts Payable Supervisor / Finance BPO). Furthermore, the employees are not clear on e.g. their own approval and authorization limits. This results either to the ineffective use of the company resources when items are bounced back and forth within the company or to possible unauthorized decisions and lack of control/visibility on the decision making process. The corporate requirement is that all entities within the corporate structure have documented, approved, and enforced WCAP policies in each country. The corporate aim is to improve the WCAP management by bringing visibility and understanding of the process and by harmonizing working practices to allow smooth WCAP item processing. In order to achieve this, a thorough redesign and redefinition of the Finnish WCAP, OTC and PTP policies is required.

Thirdly, the measurement of WCAP performance is not clear. There are only a few indicators that are followed up on a regular basis (e.g. DSO and receivables aging structure), but a vast majority of the global policy requirements for WCAP measurements are not followed. Partly this lack of measurements and follow-up is due to the available resources and used systems. It has been decided that if it is not possible to get the measurements easily from the existing systems, only a limited amount of resources is used to manually produce the information. This has resulted in a limited visibility of the WCAP performance and limited the possibility to proactively improve WCAP levels. It is also recognized that the currently used measurements are not necessarily the most effective and relevant measures for controlling WCAP performance in day-to-day management (Manager of Customer Accounting and Credit Control)

The interviews also revealed that there is substantial variation in the way WCAP is managed between the company's current product lines. This seems to be due to the different nature of the business and different business practices between the various product lines. In product line 1, for example, the nature of the business is that the customer must be able to use the company services within an hour's notice. Hence a thorough credit checking procedure would cause the company to lose business opportunities. This mainly applies for ad-hoc one-time users. On product line 2, on the other hand, even the one-time service user's monetary value can be so big that a proper credit control process must be completed before any transaction can take place. As a result, the company has different processes for e.g. credit control between product lines. These differences are not clear to all of the people in the organization. (Head of Marketing & Sales, Head of Finance)

Lastly, it was discovered that everybody seems to have an up to date job profile documented and that the basic tasks that an individual is supposed to perform are clear. It also seems clear that within the finance department the roles are reasonably clear, but to the rest of the organization it is still unclear who in finance organization is actually doing what. The same seems to apply to a certain extent vice versa as well. This can be due to the recent, and almost all the time ongoing, organizational changes. On the other hand, from the WCAP management process point of view the roles and responsibilities are not always clear. As an example is the lack of clarity regarding the definition of the standard terms of payment – who decides and how? (Manager of Customer Accounting and Credit Control, Head of Marketing & Sales). In general, there seems to be a lot of confusion in the appropriate authorization and approval levels. These issues seem to be related to the lack of a properly documented working capital policy, OtC policy, role specification within the process, and adequate communication and staff training.

In the following sections I shall cover separately the Order-to-Cash and Purchase-to-Pay policies and their components as defined in the case company's global WCAP policy.

6.1.2. Order-to-cash gap analysis

The global OTC policy focuses heavily on the finance and accounting related WCAP items within the company as described in the Methodology section. The focus areas are "Credit

Risk Management", "Collections Management", "Dispute Management" and "Cash Application". In addition to these I shall also investigate the "Billing" section of the OTC cycle in order to cover the OTC items closest related to finance department.

As mentioned earlier, the first gap identified for OTC is the lack of country specific policies and procedures for OTC. There exists a local credit policy that is close to OTC policy content, but it is several years old and not harmonized to suit the current environment. Having a local country-specific OTC policy is a mandatory requirement from the corporate management.

Another major gap in the process is the lack of OTC measurement. The global policy framework defines a set of mandatory measures that must be implemented in a country. A number of these measurements will finally come from the new corporate reporting system, but in the mean time, the evaluation of more thorough and visible measurement should be carried out in the case company.

6.1.2.1. Credit risk management

Credit risk management in the case company is currently handled in two main work streams, one for each major product line. The main reason for the split is the earlier mentioned difference in the business practices and needs in the market between product lines. Also the different billing and accounts receivable systems have made it difficult to harmonize the credit risk management. The full AR system harmonization was planned for spring/summer 2005, but it has been delayed due to technical difficulties. Currently the aim is to have the AR for the case company in one system during fall 2005. The change is aligned with the company IS strategy and is also in line with the OTC policy where it is acknowledged that separate principles should also be applied, to a certain degree, in the future for different product lines. There is, however, a need to harmonize and document the process for credit risk management when the systems change. (Manager of Customer Accounting and Credit Control)

Currently the company is able to log the granted credit limits to one of the systems, but not for all customers. This is a clear deviation from the global process and has also been noted by internal auditors (General Process Review – Regular Audit, 2005). Credit limits are granted by credit control either based on the requests from sales or on predefined limits. Credit control does not use any specific formula to calculate the granted or proposed credit, but trusts their

knowledge. This naturally makes the granting of credit limits more subjective and less visible to the organization. This is a deviation of the policy and should be investigated further. The credit control team also has higher limits than globally proposed for granting credit. This is a decision made in Finland to speed up the process and, at least currently, has not imposed any increased credit risks or bad debts. The authorization process should, however, be documented together with the OTC process definition.

Credit limits are based on the information from Dun&Bradstreet and Suomen Asiakastieto. This information includes credit rating, customer operations history, financials, background info, and past payment behavior. General customer payment behavior info is normally available with a two months' delay. The credit rating info is used in deciding the granted credit limit. In the evaluation of the credit limit, however, no emphasis is placed on the probability of default. It is expected to be implicitly built into the credit rating. This is an exception to the policy and should be evaluated in more detail. If no information for the customer is available, the credit control team uses their own judgment in deciding the credit limit. Only in high credit limits is the escalation made to Manager of Customer Accounting and Credit Control, the Head of Finance and Managing director. It is not clear when the escalation is made. It is done on a case-by-case basis. This needs to be cleared and documented.

The staring point for credit limits is always no limit (=cash payment) or the lowest possible limit. Granting credit to private persons is done only for certain products and product lines on exceptional basis. The global OTC policy aims to accept only cash or credit card payments from private customers. This must be evaluated within the Finnish context and agreed upon since it has a direct impact on the way the company is able to operate among the business-to-customer and customer-to-customer market segments.

Credit reviews are handled mainly based on exceptions or spot checks. There is no standard procedure to carry out a credit review of the customer base. Credit control reviews are reactive instead of proactive. There is no standard procedure to perform a detailed credit review, e.g. on a quarterly basis for major customers. On the other hand, the company performs daily credit monitoring based on the changed credit information of the customers. The company has direct interface to Dun & Bradstreet and Suomen Asiakastieto to receive daily feeds for changed credit rating info. If a customer's credit rating is changed, the

customer's credit limit is reviewed. With the current system environment, the monitoring of credit risk easily for all product lines for one customer is difficult. This will be improved when the move to one AR system takes place.

The company follows the global procedure that each entity belonging to the same group of companies as the case company itself makes their own credit decisions. In real life it is noted though that exceptions are made if needed, e.g. in a situation where the terms of payment are not harmonized throughout the company entities, and a customer demands harmonization. This process should be evaluated and documented in order to give a clear process to sales force.

According to the Manager of Customer Accounting and Credit Control only a very limited number of customers (less than 50) use collateral in their business with the case company. The only accepted collateral is cash, bank deposits or other similar cash equivalent collateral that can be cashed to its full value. These collateral are accepted on the full value of the collateral as the increased credit limit. The approach is in line with the new global policy.

The definition and setting payment terms appears to be unclear. The company has defined standard payment period of 7/10/14 days net, depending on the product line, but there is no clarity on who decides the payment terms and how they are enforced. Decision making on exceptional payment terms is also not fully clear. There is a credit policy that states the basic approval limits, but that is not harmonized for product lines, and it is not communicated fully to all staff (Manager of Customer Accounting and Credit Control, Executive Manger of Sales, Executive Manager of Key Accounts). There is no authorization table describing the payment terms authorization levels. The company does not give cash discounts to its customers, with the exception of one medium-sized customer based on a long-term agreement (Manager of Customer Accounting and Credit Control)

Monitoring credit customers for credit development and changes is not done regularly for all customers. The changed credit information is received from the credit rating company by customer, but a total customer base review is not done on a regular basis. Only predefined customers are monitored on bi-annual basis. It is worth noting that this only applies for 1 product line currently. When the AR system changes, the possibility for increased monitoring increases. The recommendation is that a standard customer portfolio credit review is

activated. This should include the customer base analysis on sales channel and/or customer segment levels.

The global OTC policy states that a specified watch list for customers under tight credit control must be used. This is not done in the case company. The lists of closely monitored customers are based on the individual credit controller's memory. No collective company-wide "watch list" is used.

Setting customers on credit stop is done by credit control. This is in line with the OTC policy. However, there is no control mechanism in place to see whether the customer exceeds the granted credit limit. This is currently only possible on a case-by-case basis, no proactive information is available. Lifting credit stops is done by credit control, in cooperation with sales. There is no official statement in the company when a credit stop can be lifted.

Accounting for credit provisioning and write offs is done through a seven category approach where on a monthly basis the open receivables are categorized according to their aging, and each aging category balance is then allocated with a percentage to be accrued for write-offs. The current AR is allocated with 0%, the next category with 3%, the following with 10% and so on until the last category where 100% of the extremely old AR balance is accrued for write offs. The standard aging approach currently applies for one product line only. The decision to complete the actual write-off and/or reverse the accrual is made by the Manager of Customer Accounting and Credit Control.

6.1.2.2. Billing

Billing as a part of the general OTC process is not part of the case company's global OTC policy. Due to the close ties with accounts receivable management and dispute/claims handling, I have included an evaluation of the customer billing from WCAP point of view into the interviews.

It seems that the billing procedures in the case company suffer from the same challenge as does the AR management. Separate billing systems for separate product lines make e.g. monitoring of customer credit notes more difficult. However, the existing systems do allow

product line specific credit note monitoring for customers, so monitoring in general is possible.

The tasks of the billing department are also colored by a similar difference in the underlying business practices in the market as is e.g. the handling of credit limits. In certain product lines the customer must be able to use the services almost immediately when the need arises, whereas in other product lines, the demand is not so urgent. This has led to a more streamlined and standardized product features and billing procedures for the first product line compared to other product lines. It is also worth noting that the pricing structures for the separate product lines are completely different: product line 1 has higher margins, and the prices include the majority of the extra product features, whereas product line 3 has low margins, and the total price comprises of several small individual charges. This same logic applies within the whole industry and has also contributed to the fact that billing procedures for product line 1 are faster and harmonized per product compared to product line 3. For all product lines the number of manual invoices is approximately 1-2% of the total invoice volume.

For all products there are standard billing cycles, and they are enforced and monitored. Credit notes and invoicing time are monitored on a monthly basis but not for all products. It seems that from the process point of view only relatively few invoicing errors occur, but when the errors do take place, they are sometimes exceptionally large in nature. This results in a need to make manual corrections later in other company procedures e.g. accounting and reporting. It also seems that even though there is a control mechanism in place to control and monitor billing errors, not all of them are caught. Hence, the proposition would be to establish an automated control for invoicing errors, e.g. an invoicing system not allowing debits or credits over a specified amount without prompting for confirmation.

There seems to be a lack of control in the credit note issuing policy. When sales department requests a credit note to be issued, it is only occasionally checked for validity. Even if the amount of the requested credit note is large, the billing clerk does not request for confirmation but issues the note directly. This seems to be due to the fact that the credit note approval process and the procedures are not clear to everybody. The practice for issuing credit notes differs between product lines. It was also found out that billing clerks are able to issue credit

notes themselves without authorization. This is in accordance with the current agreement in the case company, but not in line with the global OTC policy.

In total, there are approximately 3-5% credit notes issued compared to the total invoice amounts depending on the product line. These are monitored reactively by credit note issuing reason codes. According to the persons interviewed there is no process for addressing the root causes of credit notes in a systematic way. This standard root cause analysis, resulting action plans, and actions should be implemented in order to reduce the number of credit notes.

Based on the interviews, there seems to be a lack of visibility in the OTC process. It appears that e.g. billing does not see any information from credit control on the progress and the status of collection activities and the AR status. On the other hand, the AR and credit control only see the billing information in the AR, but they do not receive any information on the changes in the billing efficiency etc. (Manager of Billing, Manager of Customer Accounting and Credit Control, Billing Team Leader 1)

6.1.2.3. Collections management

In the collection management procedures the company is also undergoing a change due to system changes. There is currently a clearly different collection procedure between product lines. This will be changed when the AR systems are combined.

Currently there is no separate escalation process for global or key accounts. This is a clear deviation from the OTC policy and should be re-evaluated. However, the dunning procedure is separated for small and large customers. All customers do get a dunning letter, but from there onwards the process differs for large customers. Small customers are addressed to the collection agency relatively fast if no response from the customer is received to the dunning letters. With large customers the dunning is done by phone after the first letter and if telephone dunning is not successful, then the escalation is handled on case-by-case basis. Disputed or claimed invoices are not collected or dunned. The dunning letters contain the information requested in the global OTC policy (total account balance, overdue balance, advance payments balance). Currently no fully automated dunning letters are produced due to technical constraints. This should be investigated in more detail after the AR systems are combined.

The customers are charged for dunning activities and the majority of the customers who receive the additional dunning charge actually pay for it. The dunning charges are based on the number of sent dunning letters, not on the time the credit control spends on the account. Individual invoices trigger the dunning letters, but no individual invoices are sent to collection. Collection always deals with the total account. Dunning stops can be set in the AR system and the process is documented on high level in the existing documentation. However, there is no clear and detailed information available on how and who can lift a dunning stop.

Also, late payment charges are imposed on the customers, and they are followed up based on spot checks. There are only a few exceptions who are exempted for late payment charges. The late payment interest rate is the general 16% p.a., with a few exceptions.

In the case where an account needs to be written off, the decision is made by Manager of Customer Accounting and Credit Control. For exceptionally large amounts, Head of Finance and Managing Director are involved. This process for write-offs is also not fully documented to reflect the current environment. Write-offs and the need for them are evaluated on a monthly basis by Manager of Customer Accounting and Credit Control. An account is referred to the company lawyer for legal proceedings only in exceptional cases. The cases are evaluated by Manager of Customer Accounting and Credit Control. On a yearly basis there are only approximately 50 customers who get referred to a lawyer for further collection activities. (Manager of Customer Accounting and Credit Control, Company Lawyer)

The collections are not properly reported. A collections report is prepared on a monthly basis, but it is not used to communicate the status of the collection activities to the management. It is only used as a working tool for AR and credit control. No separate performance targets are set for collections management. Measurement relies only on DSO measurement. Sales force is not informed on the ongoing collections for their customers. This could also be solved after the AR merger when the system is able to generate such a report to sales. (Manager of Customer Accounting and Credit Control)

6.1.2.4. Dispute management

There exists a documented procedure for handling customer claims and complaints where it is stated that dispute management in the case company is handled in two work streams. The process aims to give a first contact resolution to the customer via customer service. If the agreed limits for granting a possible compensation in customer service are not enough, the claim is handed over to the claims handling team, headed by the company lawyer. The claims handling team will then log the claim and continue the discussion with the customer. All claims-related documentation is held in print copies for the time required by local legislation (Company claims policy and procedure)

Claims are reported separately for separate product lines. The reporting logic is the same, but not all required information can be reported in both systems. The development of one of the systems is currently ongoing to cater for the reporting needs. Currently the case company is not able to provide a full visibility on the total claims and complaints process. This issue is also under investigation.

All disputes that are handled by the claims handling team are assigned a unique dispute number as required in the OTC policy. The status of an individual claim is only monitored by the person working on the claim. There is no harmonized way to report the status of open claims collectively. Compared to the OTC policy requirements, the logging of dispute outcome and monitoring the dispute handling performance is not done as required. The other measures proposed in the OTC policy (Days outstanding disputes, disputed invoices as a percentage of total invoices) can be measured but only manually. (Company Lawyer)

6.1.2.5. Cash application

Applying cash and payments to relevant customer accounts and transactions seems to be well in line with the OTC policy. A vast majority (95%) of the customer payments are automatically allocated to the right account with the banking reference number and customer account. The rest of the payments are allocated manually in the system, and 100% payment allocation is achieved. Should the customer either post a prepayment or overpayment, the balance is recorded on the customer account. If the amount in the case of overpayment is substantial, the customer is contacted by phone. If the customer posts an underpayment, the remaining balance of the invoice is still left within collections. There is a tolerance of a few

euros due to rounding. This process is currently not harmonized for all product lines, but must be harmonized with the merger of AR systems.

There are virtually no debit notes from customers. Debit notes are issued by a customer to the case company only occasionally, and they are always related to a claim. As a rule the debit notes are not accepted but in case deemed necessary, a credit note to the customer is issued. The so-called "supplier customers" are a possible exception to this case. A supplier customer is both a customer and a service provider to the case company. In these cases netting is some times used to settle accounts on both sides. All netting, especially foreign, is handled on a case-by-case basis. (Manager of Customer Accounting and Credit Control)

6.1.2.6. Foreign customers

From a credit control point of view foreign customers are a big challenge. The payment behavior of the foreign customers is more relaxed and the payments can easily take up to twice the time that it takes for a domestic customer. In general, the case company does not charge late payment interest from foreign customers and the payment terms are slightly longer than in domestic transactions. (Unless agreed otherwise in the contract with the foreign customer) (Manager of Customer Accounting and Credit Control)

6.1.3. Purchase-to-pay gap analysis

The global PTP policy in the case company focuses on accounts payable related items. The focus areas are "Purchasing", "Reception and Verification of goods", "Invoice Handling", "Discrepancy Management", "Payment Processing" and "Supplier Query Handling".

Like the OTC processes, PTP processes also suffer from not having a country specific documented process and procedures available. This is a mandatory requirement from the corporate management. Current systems limit also the PTP process monitoring, e.g. the monitoring of accounts payable. This has already partly been solved when the case company merged the AP handling into one system. However, there are still no standard agreed measures to be used the PTP process performance. Only the days payables outstanding (DPO) is used as a measure even though the global policy framework defines a set of mandatory measures that must be implemented in a country. A number of these measurements will

finally come from the new corporate reporting system, but in the meantime, the evaluation of more thorough and visible measurement should be carried out.

It also seems that there are no clear guidelines for year-end management initiatives for handling payments. There are general rules that should be applied for intra-company payments but no full clarity on the external payments to suppliers. The global policy gives clear guidelines for the year-end payment processing, and this should be also re-evaluated in the case company.

6.1.3.1. Purchasing

As with the OTC process, the main PTP process elements seem to be clear to the people involved in the process on a daily basis, but for the rest of the organization the process is unclear. The roles and responsibilities seem to be clear on paper, but in practice there seems to be a substantial amount of un-clarity regarding the invoice approval limits, authorization process, exceptional payment terms approvals, etc. (Executive Manager of Sales, Executive Manager of Key Accounts). This seems to stem from the lack of properly documented and informed PTP process.

The case company has standard payment terms (14 or 30 days) that are used by procurement in the negotiation of the contracts. However, it seems that the standards are not known to people who make purchases directly to their respective department, e.g. marketing material. The standard terms are also shorter than the corporate requested standard. The standard terms should be verified to be in line with corporate guidelines and then communicated to the budget holders making the orders.

There are a very few early payment discounts offered to the case company. In case the cash discount is offered, the company takes advantage of the offered cash discounts. The impact of using the cash discount is not evaluated in more detail. There is no NPV calculation behind the decision as required in the corporate policy. This should be investigated to see if the volume of the offered cash discounts justifies the NPV process to be setup.

The case company handles payments mainly through electronic banking transfers. Only a few exceptional cases require an actual mailing of a payment order or a physical visit to a bank.

The company has no direct debits from its banking accounts, with the exception of the agreed banking fees. The banking fees are summarized and confirmed monthly. The case company uses two commercial banks in Finland, one main supplier and one secondary. The main commercial banking accounts are emptied to a global in-house bank on a nightly basis to allow for corporate treasury to invest the possible excess funds and, if needed, transfer the funds to other group entities. The in-house bank is also used in case excess funding is needed.

Supplier data is managed by the accounts payable team in the AP system. The relevant supplier data is fed to the system either when a new procurement contract is made or when an invoice is received and no such supplier is found in the system. Suppliers are assigned a unique supplier number. Supplier data is not segmented in the system, but there is a segmentation based on the need for absolute timeliness for payments. All governmental and official charges together with specified critical suppliers are paid as priority one payments. This approach follows the global PTP process. It could be investigated if this part of the payments could be more automated by implementing a supplier segmentation already in the system instead of tracking the above mentioned high priority payments manually. The AP system has a built in feature to verify the invoice number, so that the same invoice is not paid twice. However, this has proven to be inadequate, and more control mechanisms should be set up in the system to verify that invoices are not paid twice.

6.1.3.2. Reception and verification of goods

It is the budget holder's responsibility to verify the goods and services against the invoice. There is no automated control to verify that the invoice is paid only after the verification. The control is implicitly built in to the requirement that the budget holder verifies the goods and only then authorizes the invoice for payment. This process sequence should be made clear to the budget holders.

6.1.3.3. Invoice handling

The case company currently handles all received invoices centrally in one location, with occasional exceptions. The invoices are scanned to an electronic format, and all approval and allocation process happens electronically. Only when an invoice is approved is it paid and moved to the general ledger and onwards to reporting systems. All AP is handled in one

system. This follows the global process otherwise, but the invoice should already be booked to the general ledger upon reception. The case company has concluded that in the absence of the automated general ledger entry, the current amount of resources does not allow entries to be done manually.

Payments are made based on the agreed payment terms with the supplier. The payment period is read from the supplier master file to allow control for agreed payment periods. The payment period count starts from the day of the invoice. This is not in line with the global policy where the payment period count should only start from the date of the receipt of the invoice. This should be investigated if it can be changed and still be in line with the prevailing business practices and legislation.

The case company has purchases both with and without a purchase order. The desired state is that all purchases would be done through a purchase order to allow more management planning and control on spending. The process for handling purchases with or without a purchase order is the same. This logic does not follow the global policy where an invoice within the tolerance levels of the corresponding purchase order should be automatically approved to avoid double work. All invoices are automatically put on payment hold and there is no automated approval process for any invoice. This follows the global PTP process.

There is a deviation from the global PTP process in the current process for accruing expenses in the case company. There is a group wide guideline for consolidated financial statements but that is not followed fully in the building up of accrual for purchases. The case company builds an AP accrual only at the end of the month, instead of applying the desired PTP process of immediately booking the received invoice as an accrued expense and then reversing the accrual when actual payment is made. This deviating process has been adopted due to the AP system not being able to feed accounting with online information. This items should be investigated and evaluated if it should be changed

6.1.3.4. Discrepancy management

The discrepancy management of the invoice and the invoice data checking are mainly the responsibility of the budget holder. The case company does accept invoices without any clear indication of the company contact, project or other reference. This is not in line with the

global process where it is stated that all invoices without proper identifiable reference to the contact, project or similar must be returned to the supplier and re-issued with correct references. There is also no verification process that the budget holders correctly allocate the amounts to correct general ledger accounts or cost centers. This control should be set up to avoid incorrect bookings.

6.1.3.5. Payment processing

The standard supplier invoices are received either weekly or monthly. The standard payment runs are twice a week (Tuesdays and Fridays). The global requirement is that payments are to be made ideally 3 times a month. This should be investigated. Also, the case company pays invoices too early on a regular basis. This is due to the fact that the payment program is fed with the due date interval that is to be paid. The interval is always fed as from the current date to the next payment run. In this case e.g. a payment due May 7 2005 will end up being paid in the payment run of May 5 2005 instead of the desired May 8 2005. This is not in line with the global policy and should be changed if the prevailing business practices allow.

Based on the interviews, the budget holders are also not aware of the payment timetables. This should be communicated to them to ensure smooth transaction processing.

6.1.3.6. Supplier query handling

The global policy suggests that the countries should set up an accounting helpdesk to handle supplier queries. In the case company it has not been seen necessary. Supplier queries are coming mainly in two alternative ways, either directly to the accounts payable team or to the budget holder. Supplier queries are requested by the PTP policy to be logged and followed up to ensure prompt supplier query handling. Neither of these activities are done. The expectation is that once the query is assigned to somebody, that person will see that the case will be resolved. This is not in line with the policy and should be re-evaluated. In case escalation of the possible problem related to a supplier query is needed, the budget holder will escalate the issue.

6.1.4. Summary of the gap analysis

In summary, the gap analysis showed that there is a substantial deviation in the case company's current practices versus the global requirements. Some parts of the global requirements seem sensible to be introduced to the Finnish organization, whereas some other parts do not appear to bring the added value needed to justify the extra effort. Table 3 below summarizes the proposed key action points for the case company improvements. Some of the actions triggered by this study have already been addressed, and their status at the end of September 2005 is also presented in the table.

Table 3: Proposed key gap analysis actions

General Working Capital Management	**Current status**
Create Finnish WCM policy	Ongoing
Agree key WCM measures in Finland	Ongoing
Communicate the WCM concept and importance in teams	Open
Bring visibility to key WCM measures	Open
Harmonize WCM processes over product lines	Open
OTC Process	**Current status**
Create Finnish OTC policy	Pending for comments
Agree key OTC measures in Finland	Ongoing
Train people in teams for new OTC policy	Open
Harmonize AR handling systems	Ongoing
Resource credit control team adequately	Done
Separate customer database handling and credit control	Done
Record credit limits for all customers	Pending for system change
Improve claims handling recording and visibility	Ongoing
PTP Process	**Current status**
Create Finnish PTP policy	Open
Year end payment management process set up	Open
Ensure standard payment terms are used	Ongoing
Improve the AP control for possible double payments of invoices	Open
Update cost approval levels and cost centre owners in the payment system	Open
Enforce proper references in received invoices (e.g. project codes or contacts)	Ongoing
Set up payment runs to follow global date intervals (ref. "never pay early")	Open

6.2. The working capital performance

In the below section I shall look into the company data and try to verify or reject the findings from the interviews. I shall also present the WCAP management in the case company with actual numbers.

6.2.1. General working capital components

The general review of the case company's working capital is based on the company public income statement and balance sheet data. Reviewing working capital elements through the balance sheet revealed that the previous two separate entities of the case company, now handled as one legal entity in 2005, can be compared to a certain extent. The basic business logic is the same, although the difference in the features of the services in the two parts of the company causes differences in the reporting procedures. The analysis shows that the year 2004 has some exceptional items, e.g. high receivables and payables from/to the entities within the same group of companies. This is due to the restructuring of the company structure. The general working capital analysis has been conducted without the impact of the group company items to allow more sensible comparison of the yearly development.

It can be seen that the high turnover in the Case Company X-b has also resulted in high accounts receivable volumes. This is mainly caused by a few large customers, whose turnover peaked at the end of year 2004. These customers have also longer than average payment terms. In the Case Company X-a the turnover development has been stable, and the company has been able to reduce the AR totals. This has resulted in a slight decrease in DSO. Both the quick ratio and the current ratio show slightly below industry average figures, indicating that other companies in the industry are performing better with their working capital, AR and AP management. The finding also indicates that the company is slightly less liquid than its competitors, but on the other hand, has no idle funds tied up in the current assets. The low current and quick ratios can be partly explained by the fact that even before the two companies have been legally integrated, both of them have had the possibility to rely on the global in-house bank on a short notice, hence there has not been a need to hold extra liquid reserves. Table 4 presents the summary of the case company working capital elements and key ratios calculated from the balance sheet data over the past 3 years.

Table 4: The development of case company's working capital

in 1000 eur	Case company X-a			Case company X-b		
	2004	2003	2002	2004	2003	2002
Turnover	164,200	165,600	161,094	47,500	39,500	38,838
Total Spend (Materials, Services & Other)	143,377	141,891	139,713	36,533	30,417	30,032
Current Assets (excl group companies)	15,239	15,341	14,613	7,683	7,363	6,195
Current Liabilities (excl group companies)	11,358	15,185	13,243	5,812	4,480	3,576
Net Working Capital (excl group companies)	3,881	155	1,370	1,871	2,883	2,618
Total Assets	50,958	40,917	38,372	13,108	9,928	7,383
---- Cash	651	362	134	6	1,923	1,785
---- Accounts Receivable	12,254	13,548	13,529	6,741	4,175	3,936
---- Receivables from group companies	5,704	4,812	7,006	4,662	1,730	151
---- Inventories	0	0	0	0	0	0
---- Other AR	32,349	22,195	17,703	1,699	2,100	1,510
Total Liabilities	50,958	40,917	38,372	13,108	9,928	7,382
---- Accounts Payable	1,464	6,482	3,965	700	585	337
---- Payables to group companies	28,940	17,781	18,796	2,567	2,122	1,265
---- Other Liabilities	20,554	16,654	15,610	9,841	7,221	5,781
Key Ratios						
Current ratio	0.5	0.6	0.7	1.5	1.4	1.3
Quick ratio	0.5	0.6	0.7	1.5	1.4	1.3
DWC (Days Working Capital)	24.0	15.6	21.7	46.4	33.2	33.8
DSO (Days Sales Outstanding)	28.7	29.8	30.7	41.9	37.5	37.0
DPO (Days Payables Outstanding)	3.7	16.7	10.4	7.0	7.0	4.1
DIO (Days Inventories Outstanding)	0.0	0.0	0.0	0.0	0.0	0.0

Where,
DPO = average payables / average spend per day
DSO = average receivables / average credit sales per day
Curernt Ratio =Current Assets / Current Liabilities
Quick Ratio = (Current Assets-Inventories)/Current Liabilities
DWC=(Receivables + Inventory - Payables) / (Sales / Days).
Days = 365 days

Looking into the different possible ways of managing working capital in the case company, the key elements seem to be accounts payable and especially accounts receivable. Due to the nature of the business in the service industry, inventories do not play any role at all in managing working capital.

6.2.2. Customer base analysis

In total, the case company's account base consists of 57,000 accounts, of which 19,000 accounts have been active between September 1 2004 and August 31 2005. The rest of the accounts are inactive. The case company groups accounts to customers in various ways depending on the purpose. For this study, one company is considered to be equal to one legal

company number (VAT number = Y-Tunnus). I have excluded the inter-company accounts, closed, and deleted accounts from the analysis. The company uses global, revenue-based, definitions for classifying the customer base. The customer segments have been defined as presented in table 5 below.

Table 5: Customer groups

Segment Category	Segment	Net Revenue per annum
Large Customers	L1	>500,000
	L2	>400,000
Medium Sized Customers	M1	>200,000
	M2	>50,000
	M3	>25,000
	M4	>10,000
Small Customers	S1	>5,000
	S2	>1,000
	S3	<1,000

Using the above described method of combining accounts to customers by the VAT number and extracting actual billed revenue from the billing systems by account, the case company's customer base can be split into these segments. Using the case company's segment classification and customer grouping, the case company has 34,105 customers of which 8,796 customers have been active between September 1 2004 and August 31 2005. The relatively low number of active customers versus the total customer base can be explained by two factors. A large number of customers only use the case company services for special transports, hence there could be an interval of over one year between the invoicing events. The other factor is that the case company truly has a large customer portfolio, and the customer churn rate is relatively high among the smallest customers in the whole industry (e.g. private persons or small companies). It can also be seen that the company generates a vast majority of it's revenue from large customers (58.6%). When looking at the average revenue per customer, it can be seen that the relatively few customers in the largest segment generate each, on average, almost two million euros of revenue on yearly basis. Table 6 summarizes the customer base segmentation.

Table 6: Customer base segmentation

Segment Category	Segment	Segment id	Trading Category	# of customers	Total rev (1000 eur)	Rev per customer	Share of customers (%)	Share of revenue (%)
Large Customers	L1	0_L1	Active	51	100,831	1,977,069	0.1	56.8
	L2	1_L2	Active	7	3,179	454,140	0.0	1.8
Medium Sized Customers	M1	2_M1	Active	59	16,534	280,229	0.2	9.3
	M2	3_M2	Active	283	28,059	99,150	0.8	15.8
	M3	4_M3	Active	278	9,599	34,529	0.8	5.4
	M4	5_M4	Active	557	8,826	15,845	1.6	5.0
Small Customers	S1	6_S1	Active	585	4,207	7,192	1.7	2.4
	S2	7_S2	Active	2,053	4,816	2,346	6.0	2.7
	S3	8_S3	Active	4,923	1,565	318	14.4	0.9
	S3	8_S3	Inactive	25,309	0	0	74.2	0.0
			Total	34,105	177,616	5,208	100.0	100.0
			Total Active	8,796	177,616	20,193		

When the customer base is analyzed from accounts receivable and credit control point of view, two main findings can be seen. Firstly, there is a substantial number of customers who have separate payment terms for separate accounts. The case company data shows and confirms the findings from the interviews that one customer can have several different payment terms in the accounting system and the AR. Almost 33 % of the active customers have more than one payment term. This is mainly due to historic reasons, but is seems evident that the case company is not following the similar credit control and payment terms assignment philosophy in all product lines. Table 7 summarizes the findings of multiple payment terms. Secondly, the case company does not yet have systems that would allow the credit limit monitoring for full customer base. This issue is currently being solved, but contrary to the original plans, the implementation has been delayed due to technical reasons. The delay in the implementation created a situation where a proper customer base credit limit analysis for this study has not been possible. Also, the impact of the delay in the new harmonized systems environment on the total study is substantial, since no comparison could be made between the old and new system environments and ways of working.

Table 7: Customers with multiple payment terms

# of different payment terms	# of customers in trading categories			share of customers (%) in trading categories		
	Active	**Inactive**	**Total**	**Active**	**Inactive**	**Total**
1	5,919	24,005	29,924	17.4	70.4	87.7
2	2,360	1,255	3,615	6.9	3.7	10.6
3	436	47	483	1.3	0.1	1.4
4	65	2	67	0.2	0.0	0.2
5	15	0	15	0.0	0.0	0.0
6	1	0	1	0.0	0.0	0.0
Total	8,796	25,309	34,105	25.8	74.2	100.0

Analyzing the payment terms by customer segments reveals that in general the logical assumption of bigger customers having longer payment terms seems to be true. However, there also appears to be a number of large customers with standard payment terms and small customers with long payment terms. Upon closer inspection, the long payment terms for small customers can be partly explained by the customers being a part of a larger, e.g. European-wide, contract where payment terms have also been agreed upon. This does not, however, explain the total number of these exceptional payment terms. It is worth noting that due to a large number of customers having multiple payment terms, an average of all payment terms under one customer has been used in the analysis. Table 8 shows the payment terms findings by customer segment.

Table 8: The number of total customers per average payment term category

		# of customers in payment term categories							
Segment	**Trading Category**	**0 days**	**<=7 days**	**<=10 days**	**<=14 days**	**<=21 days**	**<=30 days**	**>30 days**	**Total**
0_L1	Active	2	2	2	13	18	11	3	51
1_L2	Active	1	0	0	3	1	2	0	7
2_M1	Active	1	3	6	20	18	10	1	59
3_M2	Active	4	43	29	126	51	26	4	283
4_M3	Active	4	56	38	132	30	16	2	278
5_M4	Active	12	179	86	226	30	23	1	557
6_S1	Active	6	250	99	186	28	13	3	585
7_S2	Active	118	1,130	237	454	73	37	4	2,053
8_S3	Active	512	3,474	318	515	60	40	4	4,923
8_S3	Inactive	4,831	18,318	767	1,067	174	135	17	25,309
	Total	**5,491**	**23,455**	**1,582**	**2,742**	**483**	**313**	**39**	**34,105**

		Share of customers in payment term categories (%)							
Segment	**Trading Category**	**0 days**	**<=7 days**	**<=10 days**	**<=14 days**	**<=21 days**	**<=30 days**	**>30 days**	**Total**
0_L1	Active	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
1_L2	Active	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2_M1	Active	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2
3_M2	Active	0.0	0.1	0.1	0.4	0.1	0.1	0.0	0.8
4_M3	Active	0.0	0.2	0.1	0.4	0.1	0.0	0.0	0.8
5_M4	Active	0.0	0.5	0.3	0.7	0.1	0.1	0.0	1.6
6_S1	Active	0.0	0.7	0.3	0.5	0.1	0.0	0.0	1.7
7_S2	Active	0.3	3.3	0.7	1.3	0.2	0.1	0.0	6.0
8_S3	Active	1.5	10.2	0.9	1.5	0.2	0.1	0.0	14.4
8_S3	Inactive	14.2	53.7	2.2	3.1	0.5	0.4	0.0	74.2
	Total	**16.1**	**68.8**	**4.6**	**8.0**	**1.4**	**0.9**	**0.1**	**100.0**

Looking at revenue per segment and payment term category, the findings are more clearly visible. The large amount of revenue in the largest segment with 0 day's payment term is explained by few foreign customers who are always required to either post collateral or pay in advance before service is offered to them. Table 9 summarizes the revenue per segment and payment term findings

Table 9: Revenue per segment and average payment term category

		Revenue in payment term categories (1000 eur)							
Segment	**Trading Category**	**0 days**	**<=7 days**	**<=10 days**	**<=14 days**	**<=21 days**	**<=30 days**	**>30 days**	**Total**
0_L1	Active	1,571	9,421	6,885	17,079	42,904	12,569	10,402	100,831
1_L2	Active	488	0	0	1,329	441	922	0	3,179
2_M1	Active	284	958	1,782	5,256	5,171	2,814	269	16,534
3_M2	Active	482	3,884	2,364	12,810	5,217	2,873	430	28,059
4_M3	Active	122	1,937	1,283	4,548	1,075	577	58	9,599
5_M4	Active	185	2,761	1,361	3,642	479	374	23	8,826
6_S1	Active	38	1,795	708	1,352	202	94	19	4,207
7_S2	Active	244	2,536	589	1,156	193	90	8	4,816
8_S3	Active	152	1,055	126	198	21	13	1	1,565
8_S3	Inactive	0	0	0	0	0	0	0	0
	Total	**3,564**	**24,347**	**15,097**	**47,369**	**55,701**	**20,326**	**11,209**	**177,616**

		Share of revenue in payment term categories (%)							
Segment	**Trading Category**	**0 days**	**<=7 days**	**<=10 days**	**<=14 days**	**<=21 days**	**<=30 days**	**>30 days**	**Total**
0_L1	Active	0.9	5.3	3.9	9.6	24.2	7.1	5.9	56.8
1_L2	Active	0.3	0.0	0.0	0.7	0.2	0.5	0.0	1.8
2_M1	Active	0.2	0.5	1.0	3.0	2.9	1.6	0.2	9.3
3_M2	Active	0.3	2.2	1.3	7.2	2.9	1.6	0.2	15.8
4_M3	Active	0.1	1.1	0.7	2.6	0.6	0.3	0.0	5.4
5_M4	Active	0.1	1.6	0.8	2.1	0.3	0.2	0.0	5.0
6_S1	Active	0.0	1.0	0.4	0.8	0.1	0.1	0.0	2.4
7_S2	Active	0.1	1.4	0.3	0.7	0.1	0.1	0.0	2.7
8_S3	Active	0.1	0.6	0.1	0.1	0.0	0.0	0.0	0.9
8_S3	Inactive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	**2.0**	**13.7**	**8.5**	**26.7**	**31.4**	**11.4**	**6.3**	**100.0**

Since revenue seems to be driving the average payment terms and there seems to be a positive correlation between revenue and payment terms, a simple linear regression analysis is performed. The aim is to find out if the annual revenue explains the number of days in the customers payment terms. The regression shows that the simple regression model, where payment terms act as the dependant variable and the natural logarithm of annual revenue is used as the independent variable, gives statistically significant correlation between revenue and payment terms. The model built suggest that the payment terms of a customer can be computed by setting Payment Terms = 2.703 + 0.812*Ln(Annual Revenue). The explanatory ability of the model is not, however, especially good (R Square = .116). The conclusion is that the assumption of higher revenue driving longer payment terms holds. The explanatory ability of the model does not change significantly even if the model is revised to be e.g. cubic or quadratic one variable regression model.

Table 10: Payment terms and revenue -regression model

Evaluated model		
Payment Terms = 2.703 + 0.812*Ln(Annual Revenue)		
Correlation coefficients	Payment terms	Ln(rev)
Payment terms	1.000	.340 **
Ln(rev)	.340 **	1.000
Statistics		
N	8,695	
R Square	.116	
t value constant	15.5	
t value Ln(rev)	33.7	

**. Correlation is significant at the 0.01 level (2-tailed).

The case company does not hold historic copies of the customer database. Therefore, it was not possible to evaluate the findings from the interviews whether the general perception that payment terms have become longer and longer is true or not. Keeping in mind the fact that working capital management awareness has been gaining more focus over the last few years in large corporations, the perception is likely to be true at least for large customers. This was confirmed by Customer Accounting and Credit Control Manager. Especially apparent this adverse trend in the customer terms of payment is with the global contracts. In these cases the countries where the standard payment term is shorter than the global average (e.g. Finland) suffer from the harmonization of the payment terms. Overall it can be said that the analysis of the customer base and payment terms shows that there is clearly a lack of harmonization in the case company's working practices when it comes to setting customer terms of payment.

6.2.3. Cash

The case company has strict global rules and guidelines on how cash management is to be handled within the local subsidiaries. The corporate treasury has online access to banking accounts, and all excess funds are deposited daily to the global in-house bank. In case extra liquid funds are needed, they can be obtained from the global in-house bank. The interest rates in the in-house bank are comparable to the commercial banks, but since it is mandatory to use the in-house bank, there is no true benefit to be gained from even investigating the possibilities of e.g. local over-night deposits.

6.2.4. Accounts receivable

The case company analysis of accounts receivables is based on the data stored in the company systems. For DSO calculations the calculation method in the case company has been altered for the year 2005 in order to have global harmonized DSO measurements in all case company entities. The change in the calculation method has had only a small impact on the case company's Finnish entity. The previous methods have been based on the comparison of month end accounts receivable amounts vs. the average of the previous three months net revenues. The new DSO is calculated by deducting backwards the monthly gross sales from the receivables balance of the end of the period, iteratively month by month. DSO is based on calendar days and is calculated from the invoice date. The DSO data from May 2005 onwards includes the previously separately reported two entities merged together. The DSO calculation method applied in this study follows the new case company DSO calculation method where the so-called back track method (as explained above) is applied to calculate the DSO, using the following algorithm (Working Capital Management Top 5 KPI's, 2004):

If (receivables at the end of the current month - gross sales of the current month) < 0, then

$$DSO = \frac{receivables\ at\ the\ end\ of\ the\ current\ month}{gross\ sales\ of\ the\ current\ month} \times number\ of\ days\ of\ the\ current\ month$$

If (receivables at the end of the current month - gross sales of the current month) > 0, then take the number of days of the current month, deduct the gross sales of the current month from the receivables of the end of the current month and obtain the "remaining receivables (1)", continue with the following iteration

If (remaining receivables (1) - gross sales of the previous month) ≤ 0, then

$$DSO = total\ days\ taken\ of\ the\ current\ month +$$

$$+ \frac{remaining\ receivables\ (1)}{gross\ sales\ of\ the\ previous\ month} \times number\ of\ days\ of\ the\ previous\ month$$

continue as many iterations until (remaining receivables (n-1) - gross sales of the correlating month ≤ 0), then

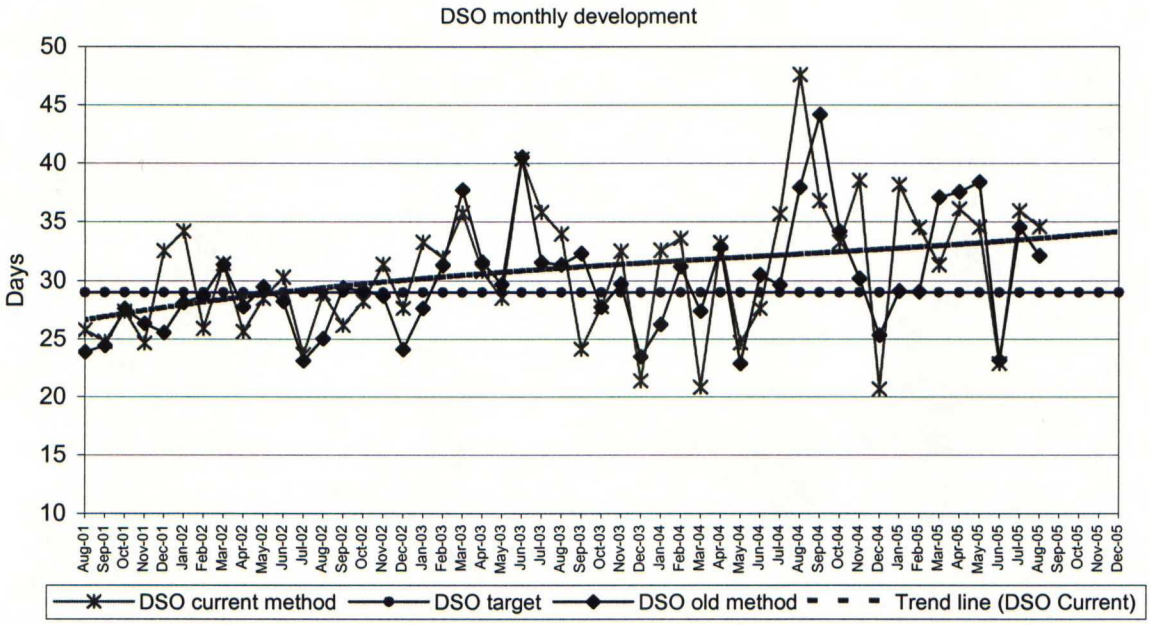
$$DSO = cumulated\ days\ taken\ out\ of\ all\ months\ until\ the\ correlating\ month$$

$$+\frac{remaining\ receivables\ (n-1)}{gross\ sales\ of\ the\ correlating\ month} \times number\ of\ days\ of\ the\ correlating\ month$$

For comparison purposes, the Best Possible Days Sales Outstanding (BPDSO) and revenue weighted average payment terms are also calculated. BPDSO figure expresses the best possible level of receivables expressed in days. The best possible level of receivables is defined as a situation having no delinquent receivables in the accounts receivable balance (all customers pay according to their payment terms). The revenue weighted payment terms serves as a validation to BPDSO levels.

Over the past four years the DSO trend has evolved steadily in an adverse direction from the case company's point of view. This finding supports the findings from the interviews where the general perception seems to be that the payment terms have become longer and longer for large customers. Using the history data as the basis for trend analysis for the DSO, it seems that over the future years, the DSO is likely to increase unless strict control is enforced. Looking at the last 4 months, the adverse trend seems to be turning, but it is partly due to the fact that the measurements were unified for the previous two separate entities. The increased collection work and new established work methods can be expected to bring DSO levels down. However, the key drivers for the total DSO development are the large corporate customers with large volumes and longer payment terms. Table 10 shows a graphical presentation of the DSO development between August 2001 and August 2005.

Figure 10: DSO monthly development



Further DSO analysis on product line level was investigated together with the Manager of Customer Accounting and Credit Control. It was found out that there does not seem to be a substantial difference between the product lines' (i.e. previous two legal entities') DSO. The two main product lines seem to differ by approximately +/-2 days in the DSO depending on the month. It was not, however, possible to investigate the details by individual products due to the fact that no accounts receivable data is stored in the system by product. An alternative approach of analyzing the DSO by customer was also tested. Table 11 shows the DSO per customer group for active customers when the DSO calculation was applied to account number level AR balances and actual invoicing. The findings show that the DSO is longer for larger customers. The findings seem to be consistent with the interviews. The total DSO on customer level is not fully comparable to the total country DSO due to the internal corporate accounts handling and the used netting principle in the case of company's internal group-wide transactions.

Table 11: DSO by customer segment (active customers)

Segment	Revenue (1000 eur)	# of active customers	open AR balance (1000 eur)	DSO (days)	Weighted avg payment term (* (days)	Difference (days)
0_L1	100,831	51	8,858	36.1	18.2	17.8
1_L2	3,179	7	226	36.9	15.7	21.2
2_M1	16,534	59	901	24.9	16.3	8.6
3_M2	28,059	283	2,010	29.0	13.8	15.3
4_M3	9,599	278	511	23.6	12.2	11.3
5_M4	8,826	557	463	20.6	10.6	9.9
6_S1	4,207	585	218	19.4	9.8	9.6
7_S2	4,816	2,053	271	20.2	8.7	11.5
8_S3	1,565	4,923	95	20.7	7.2	13.5
Total	**177,616**	**8,796**	**13,555**	**31.5**	**16.0**	**15.4**

*) Weighted avg payment term = revenue weighted average payment term

The DSO analysis in table Table 11 shows that on average the days sales outstanding is 15.4 days higher than revenue weighted average payment terms. This means that on average the receivables are collected two full weeks later than when the actual invoice due date is. There seems to be variation between segments, and in general it seems that larger customers pay their invoices later than smaller companies. This finding seems to support the earlier note that especially larger companies are aiming to adopt a systematical working capital management process where delaying payments over their due dates is seen as one useful way of reducing the net working capital.

When looking at the DSO versus the average payment terms, it is difficult to say based on the available data from the case company what causes the extra 15.4 days average payment delay. Some part of it is due to outstanding disputes, e.g. customer claims. The impact of the claims and credit notes is estimated to be on average 4.5% based on the company average data where the number of issued credit notes varies between product lines from 4 % to 5%. This explains approximately 1.4 days of the discrepancy as presented in Table 12.

Table 12 also presents the summary of the calculated revenue weighted average payment terms and calculated best possible days sales outstanding (BPDSO). The data for calculating the BPDSO in the case company is not fully complete, hence a simulation of the BPDSO has been done using the previous monthly revenues and AR data. The findings indicate that in an

ideal situation, the case company should be able to reduce the DSO at least to the BPDSO level (22.9 days) if all customers pay according to their agreed payment terms. An alternative approximation for the best possible DSO level is the weighted average payment terms. Using this approach, the proposed DSO target level would be even more aggressive (16.0 days).

Table 12: Comparison of DSO, weighted average payment terms and BPDSO by segment

Segment	DSO			Weighted avg payment term (*	BPDSO (**
	Total	Credits Share	Excl. Credits		
	(days)	(days)	(days)	(days)	(days)
0_L1	36.1	1.6	34.5	18.2	24.6
1_L2	36.9	1.2	35.7	15.7	22.8
2_M1	24.9	1.1	23.8	16.3	20.7
3_M2	29.0	1.3	27.7	13.8	24.2
4_M3	23.6	1.1	22.5	12.2	18.4
5_M4	20.6	0.9	19.7	10.6	15.2
6_S1	19.4	0.9	18.5	9.8	17.6
7_S2	20.2	0.9	19.3	8.7	18.4
8_S3	20.7	0.9	19.7	7.2	16.3
Total	**31.5**	**1.4**	**30.0**	**16.0**	**22.9**

*) Weighted avg payment term = revenue weighted average payment term
**) Simulated using old data

Further analysis and interviews in the case company did not reveal any other specific reasons or explanations, in addition to credit notes impact, to the DSO deviation from weighted average payment terms. The only explanation found was the customer's actual payment behavior. Table 13 presents the walkover from average payment terms to the total DSO.

Table 13: DSO versus average payment terms

Summary walkover of total DSO in days

	Days
Invoicing time for the actual service delivery	Varies from 1 to 10 days depending on product line
Payment terms from the date of invoice (weighted)	16.0
Credits & Dispute management	1.4
Customer delays	14.1
Other	0
Total DSO	31.5

Analyzing the case company's receivables aging shows that the data is not consistent and accurate enough to be used in a harmonized way for detailed analysis. Again, this is due to the still used two separate AR systems where the data is not handled in the same manner. This issue of AR data discrepancy and inconsistency is handled in this study by taking the methodology used in one of the separate entities and taking the atomic level data for the other entity. This detailed, atomic, data is then forced through the same reporting procedure as the other readily available methodology. The already available methodology handling procedure is the same as it will be after the system integration. The reporting procedure used here provides an approximation of the new situation after the system harmonization. Table 14 below presents the AR balances in aging categories based on the agreed time periods in the case company. Aging is reported by taking the full AR aging by 1 month intervals for the ongoing year and also reporting separately receivables older than 6 months and 12 months. The key date for the aging analysis is August 31 2005 and the time periods are defined by date thresholds (e.g. AR balance older than July 31 but newer than June 30). Table 14 summarizes the combined AR aging balances by customer segment, and Table 15 presents the aging balances shares of the total AR balance.

Table 14: Aging receivables matrix

	AR balance by date intervals (1000 eur)										
Segment	**<20040831**	**<20041031**	**<20050131**	**<20050228**	**<20050331**	**<20050430**	**<20050531**	**<20050630**	**<20050731**	**>20050731**	**Total**
0_L1	-2	25	-8	27	17	27	23	468	2,063	6,218	8,858
1_L2	1	0	0	14	-9	6	0	7	6	200	226
2_M1	0	1	1	1	-2	0	3	21	72	804	901
3_M2	4	2	6	3	2	24	26	34	231	1,678	2,010
4_M3	-9	1	-11	3	-9	-1	4	16	50	466	511
5_M4	-9	1	7	2	-7	17	-1	13	47	392	463
6_S1	0	1	1	1	0	1	0	22	27	165	218
7_S2	-2	6	4	1	9	5	-5	20	20	212	271
8_S3	6	66	20	-8	5	14	15	15	29	56	219
Total AR	**-11**	**104**	**21**	**44**	**6**	**95**	**67**	**616**	**2,546**	**10,191**	**13,678**

Table 15: Aging receivables matrix in percentages

	AR balance date in relation to segment totals										
Segment	**<20040831**	**<20041031**	**<20050131**	**<20050228**	**<20050331**	**<20050430**	**<20050531**	**<20050630**	**<20050731**	**>20050731**	**Total**
0_L1	0.0%	0.3%	-0.1%	0.3%	0.2%	0.3%	0.3%	5.3%	23.3%	70.2%	100.0%
1_L2	0.4%	0.0%	0.0%	6.4%	-4.1%	2.8%	0.1%	3.3%	2.6%	88.5%	100.0%
2_M1	0.0%	0.1%	0.2%	0.1%	-0.2%	0.0%	0.3%	2.3%	8.0%	89.3%	100.0%
3_M2	0.2%	0.1%	0.3%	0.1%	0.1%	1.2%	1.3%	1.7%	11.5%	83.5%	100.0%
4_M3	-1.7%	0.3%	-2.2%	0.5%	-1.7%	-0.1%	0.9%	3.1%	9.8%	91.1%	100.0%
5_M4	-2.0%	0.2%	1.6%	0.4%	-1.5%	3.7%	-0.1%	2.9%	10.1%	84.6%	100.0%
6_S1	0.2%	0.7%	0.3%	0.7%	0.0%	0.5%	0.0%	9.9%	12.5%	75.3%	100.0%
7_S2	-0.9%	2.4%	1.6%	0.5%	3.4%	2.0%	-1.7%	7.3%	7.2%	78.3%	100.0%
8_S3	2.6%	30.2%	9.3%	-3.5%	2.5%	6.3%	7.1%	6.8%	13.4%	25.4%	100.0%
Total AR	**-0.1%**	**0.8%**	**0.2%**	**0.3%**	**0.0%**	**0.7%**	**0.5%**	**4.5%**	**18.6%**	**74.5%**	**100.0%**

The aging of the case company's receivables shows that approximately 74.5% of the current AR balance should be collected within a month of the invoice date, and approximately 98% should be collected within a three-month period. This can be considered a fair performance on a European or Global scale, but it still shows that improvement can be made to the target, e.g. 80% of the receivables collected within a month. It seems possible to achieve this regardless of the large customers (payment terms closer to or above 30 days) impact on the total receivables.

A comparison of the case company credit collections to the latest monthly revenue in Table 16 shows that the company is able to collect approximately 65% (100%-24.1%-6.5%-2.3%-1.8%=65%) of the monthly sales within one month, additional 17.6% (24.1%-6.5%=17.6%) during the second month of sales and so on. The finding indicates that when the company is preparing the cash budget and planning for cash resources, it should plan for collecting the revenue from the customers according the percentages presented in Table 16. It can also be seen that the data quality in the collections analysis creates challenges for analysis during the time when AR handling is still done in two separate systems, with separate methodologies. This leads to a need to analyze credit collections based on mechanical simulated rules and few outliers in the produced data set cause exceptional findings when digging into details. This is apparent in the below table e.g. in segment 8_S3 where the analysis shows that 115.1% of sales is collected during the first month (this is caused by one data record where a negative

AR balance is pending in the system) and segment 4_M3 where a similar negative AR balance for one record caused the total collections to be negative after 1 month period.

Table 16: Credit Collections, % of collections from the monthly revenue

Segment	Latest month revenue	% of revenue collected (* 1 month	2 months	3 months	4 months	Other	Total
0_L1	8,587	60.3%	30.7%	6.7%	1.3%	1.0%	100.0%
1_L2	175	59.4%	14.8%	11.5%	7.2%	7.1%	100.0%
2_M1	1,210	89.6%	8.0%	2.0%	0.3%	0.1%	100.0%
3_M2	2,212	75.6%	15.0%	4.5%	3.0%	1.8%	100.0%
4_M3	679	100.7%	6.7%	-0.7%	-3.0%	-3.7%	100.0%
5_M4	701	83.2%	10.2%	3.5%	1.6%	1.6%	100.0%
6_S1	350	74.1%	15.4%	7.6%	1.4%	1.4%	100.0%
7_S2	417	65.9%	14.1%	9.5%	4.7%	5.8%	100.0%
8_S3	142	-266.7%	115.1%	94.5%	84.0%	73.1%	100.0%
Total AR	**14,472**	**65.4%**	**24.1%**	**6.5%**	**2.3%**	**1.8%**	**100.0%**

*) Excluding the impact of possible bad debts

The case company does not hold historic AR balance snapshot data on customer level, but only monitors AR on current basis. In order to calculate the Collections Efficiency Index (CEI), the beginning AR balances for the month analyzed were derived using the latest AR balance relation to monthly sales. Then this relation was applied to the previous month's sales. The formula used in the CEI calculation is:

$$CEI = \frac{beginning\ total\ receivables\ t(0) + gross\ sales\ of\ month - ending\ total\ receivables\ t(1)}{beginning\ total\ receivables\ t(0) + gross\ sales\ of\ month - ending\ current\ receivables\ t(1)} \times 100$$

Where,

t(0) is the time of the beginning of the period,

t(1) the time of the end of the period and

Current receivables is the amount of receivables due in less than 1 month

Looking at the collections efficiency (Collections Efficiency Index, CEI) in the case company in Table 17, it seems that the collections efficiency is not at a satisfactory level with the largest and smallest customers. Overall the CEI index is also relatively low, below 80, when the optimal collections efficiency would yield a CEI of 100 (all collections performed according to the agreed payment terms). This finding was discussed during the interviews,

and the interviews also partly support the finding from the analysis that medium sized customers' collection is currently handled most efficiently. Judged from the numerical analysis and the findings from the interviews, a proposed target level for the CEI in the case company could be 90 (CEI of 100 being the ideal performance).

Table 17: Collection efficiency index (CEI) by segment

Segment	Month revenue	Accounts Receivable			CEI
		Total AR (beginning of period)	Current AR (end of period) (*	Total AR (end of period)	
	(1000 eur)	(1000 eur)	(1000 eur)	(1000 eur)	
0_L1	7,846	8,094	6,218	8,858	73
1_L2	272	352	200	226	94
2_M1	1,207	899	804	901	93
3_M2	2,153	1,955	1,678	2,010	86
4_M3	783	589	466	511	95
5_M4	802	530	392	463	92
6_S1	289	181	165	218	82
7_S2	357	233	212	271	84
8_S3	102	158	56	219	20
Total AR	13,812	13,054	10,191	13,678	79

*) Current receivables is the amount of receivables due in less than 1 month

In summary, the case company's accounts receivable analysis shows that there are a number of benefits to be gained from harmonizing the AR handling in one system. The system per se, however, does not make the situation better for improving the practices. It is also required that the management is committed to monitoring the results and completing the improvement actions.

6.2.5. Inventories

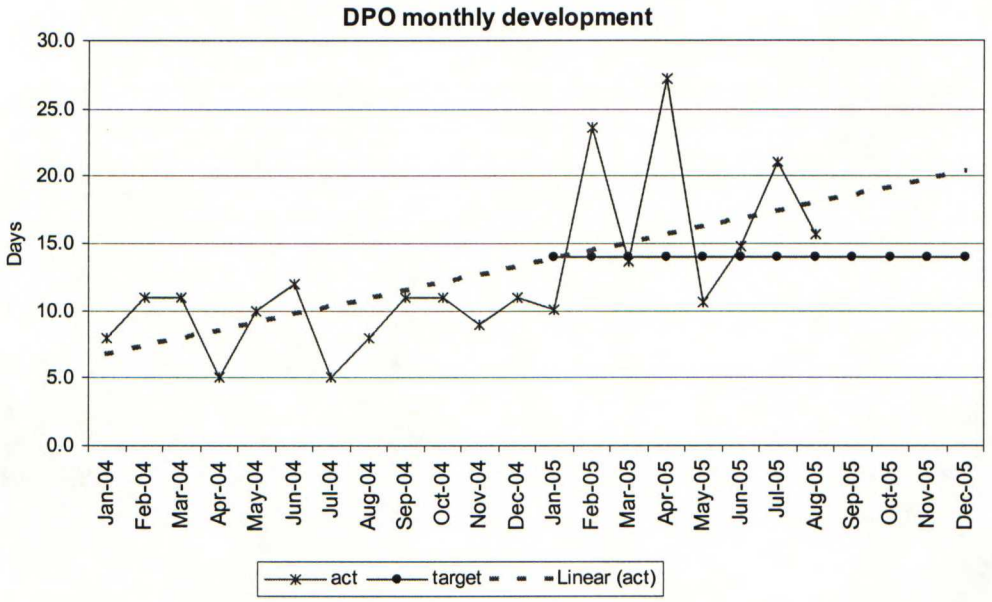
The case company has minimal inventories due to the nature of the business. Inventories are included in the discussion of the general working capital items in section 6.2.1.

6.2.6. Accounts payable

The case company has monitored the DPO on a continuous and harmonized basis since the beginning of 2005. Before that the DPO was only monitored for one of the two previously

separated legal entities. A trend analysis shows that the DPO performance is on the targeted level and that the company has been able to control payables in a more consistent way during the last few months. There still seem to be relatively large variations in the DPO performance between months. Table 17 shows the historic development of DPO.

Figure 11: DPO monthly development



The rise in the DPO levels from the beginning of year 2005 is due to the above mentioned harmonization of the DPO reporting where both previous entities are reported as one entity. Investigation was also made on the average payment terms of the supplier base.

In total, the case company has 5,557 suppliers in its supplier database. The quality of the supplier base seems to be better than in the customer base, only 3 % of the suppliers have more than one payment term. On average the un-weighted payment term for suppliers is 13.3 days. This seems relatively high in comparison to the DPO average of 17.1 days in year 2005. Upon closer inspection with the Accounts Payable Supervisor it was found out that a large payment volume is made to the business critical suppliers and subcontractors with low average payment terms. This procedure has been adopted through out the whole industry where a large number of small companies act as suppliers and service providers to larger companies. Table 18 presents the summary of suppliers with multiple payment terms.

Table 18: Suppliers with multiple payment terms

# of different payment terms	# of suppliers	Share of total
1	5,413	97.1%
2	146	2.6%
3	16	0.3%
4	0	0.0%
5	1	0.0%
6	0	0.0%
7	1	0.0%
Total	5,577	100.0%

When looking at the supplier base by the average payment term category, it can be seen that well over 80 % of the suppliers are handled in the case company with payment terms lower than, or equal to, 14 days and the remaining 20% has payment terms that are longer than 14 days. This deviates a lot from the receivables payment term category split where only 2% of the customers have payment terms of over 14 days. There is a clear mismatch in the payables and receivables position: the majority of the invoicing volume in receivables is with customers with long payment terms whereas the majority of the payment and spend volume is with suppliers with short payment terms.

Table 19: The number of total suppliers per average payment term category

	Payment term category							
	0 days	<=7 days	<=10 days	<=14 days	<=21 days	<=30 days	>30 days	Total
# of Suppliers	737	1,049	274	2,480	169	843	25	5,577
Share of total	13.2%	18.8%	4.9%	44.5%	3.0%	15.1%	0.4%	100.0%

From the working capital management point of view, the case company can improve its working capital position by continuing strategically to negotiate longer payment terms for payables. Also, the total number of suppliers is relatively high, and the company can benefit from centralizing even more the procurement volumes and ensuring that all parts of the organization are aware of the Purchase-to-Pay process and the agreed principles in company procurement.

6.3. Working capital measures

The case company has undergone considerable changes in the accounting and reporting systems environment. This has resulted in a situation where no true and harmonized, working capital measures could be measured for a while. In this study I also aim to evaluate the current situation with respect to the proposed new WCAP measurement that was introduced in the new working capital policy. The aim is to evaluate the feasibility of the measures given in the current systems environment and establish if, and how frequently, the measures could be measured if no new systems are introduced or developed.

The case company's global policy requirements for working capital management measurements are shown in Table 20 and Table 21 below. The tables present the measures that should be measured on the country level according to the global working capital policy. An analysis of whether the measure in question is currently measured or not and the analysis of the possible measurement frequency in Finland is presented in the table.

Table 20: WCAP policy measures gap analysis (General and OTC)

WCM policy KPIs

The following KPIs have been identified and are subject to implementation on **central level**:	**On country level** the following KPIs are subject to implementation:	Measured now	Measured frequency	Possible to measure	Possible measure frequency
WCM General	**WCM General**				
Days Working Capital (DWC)		No	Not Possible	Manual	Monthly
Cash Conversion Rate (CCR)		No	Not Possible	Manual	Monthly
OTC	**OTC**				
Days Sales Outstanding (DSO) *)	Days Sales Outstanding (DSO)	Yes	Monthly	Yes	Monthly
Best Possible Days Sales Outstanding (BPDSO) *) (-> Average Payment Terms)	Best Possible Days Sales Outstanding (BPDSO) (-> Average Payment Terms)	No	Not Possible	Manual	Monthly
	Average Days Delinquent (ADD)	No	Not Possible	Manual	Monthly
Collection Efficiency Index (CEI) *)	Collection Efficiency Index (CEI)	No	Not Possible	Manual	Monthly
A/R delinquent over 90 days	A/R delinquent over 90 days	Yes	Monthly	Yes	Monthly
A/R delinquent over 90 days as percentage of total A/R	A/R delinquent over 90 days as percentage of total A/R	No	Not Possible	Manual	Monthly
	A/R with dunning blocks as percentage of total A/R	No	Not Possible	Manual	Monthly
	Customers with dunning blocks as percentage of total customers	No	Not Possible	Manual	Monthly
	Days Disputes Outstanding Disputes (DDO) (DOD)	No	Not Possible	Manual	Monthly
	Disputed invoices as percentage of total invoices	Manual	Monthly	Manual	Monthly
	Disputed invoice volume as percentage of total invoice volume	Manual	Monthly	Manual	Monthly
	Customers on credit stop	No	Not Possible	Manual	Monthly
	Customers on credit stop as percentage of total customers	No	Not Possible	Manual	Monthly
Total bad debt write-offs	Total bad debt write-offs	Manual	Monthly	Manual	Monthly
Total bad debt provisions	Total bad debt provisions	Yes	Monthly	Yes	Monthly

Table 21: WCAP policy measures gap analysis (PTP, FTF, attending documentation)

WCM policy KPIs The following KPIs have been identified and are subject to implementation on **central level**:	**On country level** the following KPIs are subject to implementation:	Measured now	Measured frequency	Possible to measure	Possible measure frequency
PTP	**PTP**				
Days Payables Outstanding (DPO) *)	Days Payables Outstanding (DPO)	Yes	Monthly	Yes	Monthly
Average payment terms (A/P) *)	Average payment terms (A/P)	No	Not Possible	Manual	Monthly
	Best Possible Days Payables Outstanding (BPDPO) (Benchmark)	No	Not Possible	Manual	Monthly
Spend through direct debit* as percentage of total spend (*direct debit refers to due immediately)	Spend through direct debit* as percentage of total spend (direct debit refers to due immediately)	No	Not Possible	Manual	Monthly
Opportunity cost of payments paid before due date	Opportunity cost of payments paid before due date	No	Not Possible	Manual	Monthly
	Average spend per active supplier	No	Not Possible	Manual	Monthly
	Number of active suppliers	No	Not Possible	Manual	Monthly
FTF	**FTF**				
Days inventory held (DIH)	Days inventory held (DIH)	No	Not Possible	Manual	Monthly
Attending documentation	**Attending documentation**				
	ATB (age trial balance)	Yes	Monthly	Yes	Daily
	Reason code analysis	Yes	Monthly	Yes	Monthly
	Disputed Invoices (credit notes, wrong billing, wrong delivery, others)	No	Not Possible	Manual	Daily
	Unallocated payments	No	Not Possible	Manual	Daily
	Payment methods (A/R and A/P)	No	Not Possible	Manual	Monthly
	Credit exposure per Top 50 Key Accounts	No	Not Possible	Manual	Monthly

It seems evident that the case company is currently not measuring the required WCAP measurements. This lack of measurement is explained by the fact that only a few of the measures can be derived directly from the financial systems, and currently the resources do not allow for manual measurements to be set up. The recommendation would be to investigate the possibility to set up a proper working capital scorecard that could be used to measure WCAP performance properly with the current resources and systems. The next section will look into the working capital scorecard for the case company in Finland.

6.3.1. Working capital scorecard for Finland

One aim of this study is to propose Finnish working capital scorecard measures and targets. After interviewing the company employees, investigating the working capital measures in the case company, and comparing the measures currently used to the global requirements, it can be said that it is not fully sensible to measure the detailed working capital elements as presented in the global policy. The main reason is that the information is not easily available without extra manual work and it does not seem feasible to introduce additional manual reporting at the expense of the current company operations. However, this study has also shown that the visibility and understanding of the working capital performance is currently inadequate.

The minimum global measurement in the case company WCAP measurement has been defined by the company top management. This requirement consist of the following 5 top key performance indicators (KPI) for working capital management:

1) Days Payables Outstanding (DPO)
2) Average Payment Terms (A/P)
3) Days Sales Outstanding (DSO)
4) Best Possible Days Sales Outstanding (BPDSO)
5) Collection Efficiency Index (CEI)

These have already partly been included in the new common corporate reporting system, but their monthly production still requires manual work. In addition to these global KPIs, a few local measures are seen necessary to steer the working capital management in the case company. Based on the findings in the study, Table 22 presents the proposed working capital scorecard for the case company in Finland. The scorecard aims to give a high level monthly summary of those working capital elements that the global policy and this study have found to be the feasible measures to bring visibility on the working capital management.

Table 22: The proposed working capital scorecard

Measure	Frequency	Target	Notes
Days Payables Outstanding (DPO)	Monthly	>20	Global KPI, Target local
Average Payment terms (A/P)	Monthly	>14	Global KPI, Target local
Days Sales Outstanding (DSO)	Monthly	<29	Global KPI, Target local
Best Possible DSO (BPDSO)	Monthly	<20	Global KPI, Target local
Collections Efficiency Index (CEI)	Monthly	>90	Global KPI, Target local
AR balance older than 30 days	Monthly	<20%	Local KPI
Credit notes value as percentage of revenue	Monthly	<2%	Local KPI
Customers with <=2 different payment terms	Monthly	100%	Local KPI

Based on the findings in the interviews, it is recommended that these measures and their definitions are explained in detail to the senior management team and people who have a direct impact on the selected KPI's. This should bring more visibility on the working capital management process and increase awareness of the company's strategic vision. It is recognized that some of the measures in the scorecard will have to be manually calculated, but due to the low number of measures it is recommended that the above measures are used and communicated monthly to the company senior management.

7. Summary and conclusions

The main research problems in this study are from the case company and very operative in nature. The aim has been to conduct a working capital audit (sometimes referred to as working capital performance analysis) in the case company and evaluate the implementation of the new global policy. The aim has also been to suggest alternative working practices and methods in cases where the audit reveals a need for improvement and develop a working capital scorecard with targets and performance measurement. The main research method in this study has been to conduct in depth interviews in order to drill down to the actual working practices and evaluate the working capital understanding in the case company. The focus in this study has largely been on the Order-to-Cash process since the accounts receivable make up for the majority of the case company's working capital. Order-to-cash process is also looked at more closely than Purchase-to-Pay process in the case company global policies. In the theory section of the study, the aim has been to give an overview of the working capital management theory.

The main finding from the case study is that although the case company has had an official global working capital policy for almost over a year, it has not been implemented in the country organization. There are several gaps identified (e.g. lack of agreed and communicated policies, lack of clarity of working capital management roles, lack of documentation on roles and responsibilities and lack of required measurements), some of which have not been implemented due to more pressing business needs and due to fragmented accounting systems. Some of the gaps, on the other hand, are clear flaws in the current processes and practices. The case company is, however, working towards the global policy requirements and is e.g. harmonizing the accounts receivable handling and Order-to-Cash process during September/October 2005.

The study has also triggered a number of concrete outputs and actions in the case company. The most important ones are

1. Identified major gaps between global policy and local working practices.
2. Identified needs for additional working capital management awareness.
3. Based on the gap analysis, newly created Order-to-Cash policy for the case company's Finnish entity (pending for comments and approval in October 2005).
4. Organizational restructuring based on the gap analysis. The concentration of the customer database handling in one team and credit controlling in one team, together with the separation of the two teams roles and responsibilities (implemented in September-October 2005).
5. Agreement to continue the working capital management process development so that e.g. sales function is more involved and informed in the total working capital management process.

The working capital scorecard has been developed in this study as planned. However, it was found out that the working capital measurements that have been globally defined, will be centrally developed to the global reporting system and hence will not need direct development work in Finland. In the Finnish context, the evaluation of the current possibilities to produce the required key performance indicators versus the globally desired measures was conducted as planned. The Finnish version of the working capital scorecard has been proposed in this study.

The original scope of the study changed slightly during the study because the planned system change did not take place as estimated. This caused the study to be more focused on the current practices and less on the analysis on the systems change. The proposed next steps in the case company working capital process would be to complete the systems harmonization and complete the basic documentation on the processes and policies. The study also gave further proof that only with a harmonized system is it possible to truly harmonize working practices.

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Company Claims Policy and Procedure, Company X, 2004

Appendix 1: The working capital audit interview questions

The following questionnaire was used to analyze the gap between the new policy vs. the current situation. The secondary objective of the questionnaire was to find out the level of working capital knowledge in the case company. The same questionnaire was used for all interviewees but the interviewees were only interviewed on the areas where they were involved in their normal work. On average, the interviews lasted for 2 hours each.

Policy	Area	Question
WCAP	General	
		Do you know that there is a global working capital policy?
		Have you read the policy?
		Do you know what are the Order-To-Cash (OTC), Purchase-to-Pay (PTP) and Forecast-to-fulfill (FTF) process?
		Do you know what is the objective for working capital management?
		What is the scope of the WCAP policy?
		Do you have a country WCAP policy?
		Do you have a country AR policy?
		Do you have a country OTC policy?
		Do you have a country AP policy?
		Do you have a country PTP policy?
		Can I have copies of the policies?
		Do all organizational levels understand WCM concept?
		Are WCM roles clearly defined? How?
		Who is the treasurer?
		Who is the controller?
		Who is the billing supervisor?
		Who is the customer credit controller?
		Who is the head of purchases?
		Who is the chief accountant?
		Are WCM roles documented?
		Are WCM roles segregated to allow transparency and control?
		Do you have an authorization table for all duties in WCM?
		Is WCM performance measured?
		How is WCM performance measured?
		Do you use the WCM performance indicators?
		Have you evaluated if your staff has the right skills and competencies to perform WCM tasks?
		Do you have a formal country WCM community setup?
		If so, how often do you meet and what items are gone through?
		Do you create a standardized WCM report?
		Do you have a sample of it?
		Do you create a standard AR report?
		Do you create a standard AP report?
		Do you perform a WCM performance analysis on regular basis? How often?
		What is part of you WCM performance analysis?
		Do you monitor the key customers and suppliers WCAP impact (key customers WCM) on regular basis? How? How do you categorize key customers?
		Are you or somebody else incentivised on the WCAP performance?
		Do you have a WCAP scorecard?
		Do you think WCAP scorecard should be established?

Policy	Area	Question
OTC	General	
		Do you have written country OTC policy and procedures?
		How often do you bill your customers?
	Credit Risk	
		How do you define a customer that you control fro credit?
		Where do you set the limit for customer to e controlled for credit?
		Do you have a function for credit risk management? Who are part of that?
		Do you have an approval process for credit limits? Is it documented?
		Do you have approval limits for granting credit? What are those?
		Is the approval process and limits communicated to corporate accounting?
		Do you perform regular reviews of customers credit worthiness? How often? How?
		Do you know about the DPWN customer segmentation criteria?
		Can you provide AR data by customer segment? How?
		Describe your credit approval process?
	Credit Application	
		Do you have a credit application form? Who maintains it?
		Can I get a copy?
		When or for what customers must this be filled in?
		Who fills this in?
		Does the form contain information checklist to be used and document the efforts to obtain data about the credit applicant?
		If there is a customer doing business with SOLS, Express, and DDAO, how is the credit application handled? Separately or all together?
	Credit Appraisal	
		How do you evaluate the new customer credit? Is there a difference between new and old customers process?
		Where do you gather information about the customer for credit appraisal?
		What company are you using for external credit rating?
		Does the rating agency provide you with rating information?
		Does the rating agency provide you with probability of default??
		If several entities of the customer are doing business with DHL, do you rate them as a whole of each entity separately?
		Do you have an automated regular updates of the credit risk and customer info?
		How often? For all customers or just selected ones?
		If no rating info is available, how do you judge the credit worthiness?
	Credit Limit Proposal	
		Do you calculate the recommended credit limit?
		How? Do you have a calculation formula for this?
		What kind of formula?
		If you recommend a limit, is the granted limit something different? How often?
		Do you store in the system both the recommended and granted limit?
		What rating categories are allowed for credit? Where is the limit for not granting credit?
		Do you have a limit set in local policy when a credit can be granted and when not?
		Do you grant credit to private persons?
		Have you documented the limits and the reasons for using those limits?
		If your cash payment limit deviates from the recommended 1000 eur per annum, have you got the approval from Corporate WCM?
		Do you have a calculation method for the recommended customer credit limit?
		If no credit rating info is available, what is the limit for maximum recommended credit?

Policy	Area	Question
		Do you have a calculation method for the recommended customer credit limit for large customers?
		Do you have customers that use collateral for credit?
		What kind of collateral do you have from customers?
		How do you define the credit limit for a customer that has posed a collateral?
		Who approves credit limits?
		How do you ensure that no unauthorized credit is granted?
		What is the approval process for material credit amounts (>25000 eur)?
		If your credit approval limit is not sufficient, how do you escalate the problem and to who?
		How do you handle and approve credit limits for GCS accounts and major multi national companies?
		Do you know what/who are the GCS customers?
		Who authorizes credit limit of over 1.0 MEUR?
		Do you have credit analysts?
		Do you have credit risk managers?
		Are their job profiles and responsibilities documented?
	Payment Terms	
		Who defines standard payment terms?
		What are payment terms made of?
		What is the standard period of payment?
		What is the standard period of payment for duty vat related payments?
		Do you have a table presenting the standard payment terms?
		Are the payment terms and dates printed on the invoice?
		Does one invoice contain only one single payment period?
		What if standard terms are not enough? Who authorizes exceptions? Where are the limits
	Collateral	
		Do you ensure that collateral is only accepted from companies whose rating is higher than the credit applicants?
		Do you have standard forms for documenting the collateral?
		Are they verified by the legal department?
		Do you perform regular reviews of the collateral?
		Do you accept the full value of the collateral as an increase of the credit limit?
	Monitoring Credit Customers	
		Have you defined regular review cycles per customer segment and rating score?
		Do you follow that plan?
		Do you store the duns number for all customers in your system?
	Limit Monitoring	
		Do you keep credit review logs?
		Do you measure and control the daily credit risk levels?
		Do you perform monthly analysis of age trial balances payment behavior?
		Do you report at least quarterly if planned credit reviews have not been done?
		Do you have independent credit reviews of existing credit customers? E.g. yearly
		If so, does that result to the re-rating of the customer of change in credit limits?
		Do you document the findings in the credit review?
		Do you have a watch list of customers that you monitor more closely?
		How do you define that watch list?
		When do you remove the customer from the watch list?
		Do you allow for limit overdraft?
		Is that limit overdraft recorded in the system?
		What do you do if customer exceeds the original agree level? Who is notified, what action is taken?
	Credit Stop	

Policy	Area	Question
		Who puts customers on credit stop?
		What is the criteria for setting a customer on credit stop?
		Are the criteria described in local policies?
	Customer Default Action	
		Have you defined the process for customer default and severe delinquency?
		How do you deal in those situations? What is done?
	Credit Provisioning and Write-Offs	
		How do you account for credit provisions and write offs?
	Credit Customer Master Data	
		Do you always record customer data before first shipment?
		Who can maintain the customer data?
		Do you maintain credit file for each customer higher than M4?
		Who has access to credit files?
	Collection Management	
		Do you have an escalation process for Key accounts and global accounts issues?
		Do you use external collections agencies? Why? What agencies?
		Do you use dunning stops? Who authorizes them? Are they temporary?
		Do you have a specified escalation process for collections issues?
		How have you specified your dunning process and methodologies?
		Is there a difference in dunning process per customer segment?
		Do you record the collections efforts in the system?
		How do you inform sales about collections efforts?
	Dunning Process and Timeline	
		Are all your customers part of the automated dunning?
		Have you specified you automated dunning process in a document?
		What is the content of your automated dunning letter?
		How many dunning letters do you send?
		What is the timeline for the automated dunning process?
		What is the timeline for telephone dunning?
		How many dunning calls do you make?
		What is the success rate for dunning calls?
		How do you escalate dunning problems?
		Do you charge customers for either internal or external collections efforts?
		Are dunning letters triggered by individual invoices?
		Does the content of the dunning letter show the total overdue invoices and total overdue balance?
		Do you visit the key customers with sales and explain the collections process and go through the customers payment process?
		Do you apply late payment charges?
		How do you follow up on late payment charges?
		How do you ensure if customers pay late payment charges?
	Legal Proceedings	
		When do you refer an account to a lawyer?
		How do you account for bad debt provisions and write offs?
	Collection Reporting	
		How do you report and monitor collections
		Do you create backlog reports of unapplied cash items and credit notes in ATB (age trial balance) format with aging structure?
		Do you define individual performance targets?
		Do you monitor the total DPWN exposure and payment performance where DPWN provides services to more than one customer subsidiary)?
		How do you provide sales with sales collections report?

Policy	Area	Question
	Dispute Management	
		Do you have a company dispute management policy and process?
		Do you separate and follow-up Claims and queries?
		Do you have KPI's that measure the efficiency (through put time) and effectiveness (quality of dispute resolution)? What are they?
		Do you record disputes to a system? What system?
		Are disputes assigned a unique dispute number?
		Do you assign dispute reason codes?
		Do you log and follow-up dispute status?
		Do you log dispute outcome?
		Do you store the dispute correspondence according to the local law (DPWN min 2 years)?
		How do you provide collections management information on the disputes and status?
		Do you perform dispute performance evaluation regularly?
		Do you analyze dispute reasons regularly and address the root causes in a structured manner?
		How do you report disputes?
	Cash Application and Accounting	
		How do you handle cash application?
		Do you have prepayments of customer invoices?
		If yes, how do you ensure they are allocated promptly to the right account?
		How and when do you reconcile the accounts for prepayment and debit?
		What happens if you have remaining AR balance left on the account?
		Do you have partial payment of invoices?
		How do you handle partial payments?
		How do you handle overpayments?
	Credit Note Application	
		Do you have a policy and process for application of credit notes?
		What details are logged of the credit notes?
		Do you also credit weight and shipments? Why?
		How do you ensure that the credit note is placed on the right accounts and right service?
		How do you monitor credit notes?
		Do you have an authorization process for credit notes?
	Write-offs	
		How do you book write offs and provisions?
		Do you know if that is performed according to the section 9 in the DPWN guideline for consolidated financial statements?
	Debit Notes From Customers	
		Do you have debit notes from the customers?
		Who decides if a debit note is accepted?
		How are they handled and booked?
	Sales	
		Do you have customer segmentation document?
PTP	General	
		Do you have written country PTP policy and procedures?
		Do you have guidelines for year end management initiatives?
		Do you know what is the objective of PTP strategy and process?
		Do you have segregated roles and responsibilities of PTP?
		What KPI's Do you measure?
		Do you incentivise people on PTP based KPIs?

Policy	Area	Question
		Do you have standard payment terms?
		Do you follow them? How do you know?
		Do you follow the global corporate procurement payments terms in the contracts negotiated by corporate procurement?
		How do you communicate with corporate procurement?
		Who is responsible for the PTP process elements?
		How do you set targets for procurement? Are they in line with corporate procurement targets? How do you know?
		How do you measure the targets?
		What is your DPO today? How has it evolved over time?
		Do you know the targets for corporate procurement?
	Purchasing	
	Standard payment terms	
		What are your standard payment terms? Have you documented them?
		What are your average payment terms?
		What are your actual payment terms?
		How do you authorise the payment terms that are shorter than corporate standards?
		Do you have agreements stating payments are "due immediately"?
	Discount handling	
		Are you offered early payment discounts?
		Do you take them?
		How do you decide whether to take early payment discounts?
	Payment methods	
		What payment methods do you use?
		Do you accept direct debits?
	Supplier invoicing	
		How often do your suppliers invoice you?
		Where does your countdown for invoice due date begin?
		How do you ensure that the actual supplier invoices have the payment terms you agreed with them?
	Supplier data management	
		Do you segment your suppliers?
		Do you know the segmentation performed by corporate procurement?
		Do you assign a unique supplier identification code for each supplier in the system?
		How do you control that no duplicate payments are made?
	Reception and verification of goods and services and building accruals	
		Who is responsible for checking the delivery of goods and services?
		How do you ensure that accruals are built in accordance with Group guideline for consolidated financial statements?
	Invoice handling	
		Do you post AP immediately in general ledger after the receipt of the invoice?
		How do you ensure the process of reversing the accruals?
		What do you consider to be the starting date for invoice due date?
		How do you ensure that the invoice due date is not prior to the reception of goods and services?
		What do you do with invoices for goods that have not yet been delivered?
		How do you ensure that invoices are not paid before the agreed terms and conditions?

Policy	Area	Question
		How do you ensure that if the terms in the invoice are more favorable than the agreed ones, those favorable ones are taken?
	Invoice processing without PO	
		Do you have invoices without purchase order?
		How do you handle invoices without purchase order?
		How do you handle invoices without PO number, cost center or other indicators of owner are handled?
		Who receives the invoices from suppliers?
		Who enters the invoices to the system?
		Does the AP clerk verify the plausibility of the invoice receipt /scan date with the invoice period?
		Does your system automatically put a payment hold on the invoices?
		Does your system book the invoice automatically to the AP in general ledger?
		How do you forward the invoice to the respective budget holder?
		Does your system show the payment terms to the budget holder? Do they verify these as well?
		How does AP know when the invoice is ready to be paid?
		How does AP know which invoices should be paid in which payment run?
		How do you handle partial payments? Do you allow them?
		Who contacts the supplier if there is a discrepancy/error in the invoice?
	Invoice processing with PO	
		How do you handle invoices with purchase order?
		Do you have a process for these and is it documented?
		Do you record PO numbers in the system to allow invoice matching?
		Who receives the invoices from suppliers?
		Who enters the invoices to the system?
		When matched against the PO, what are the items to be checked?
		Have you set tolerance limits for Pos vs. the actual invoice?
		What if the discrepancy is within the limits?
		What if the discrepancy is outside the limits?
		Does your system automatically put a payment hold on the invoices?
		Does your system book the invoice automatically to the AP in general ledger?
		How do you forward the invoice to the respective budget holder?
		Does your system show the payment terms to the budget holder? Do they verify these as well?
		How does AP know when the invoice is ready to be paid?
		How does AP know which invoices should be paid in which payment run?
		How do you handle partial payments? Do you allow them?
		Who contacts the supplier if there is a discrepancy/error in the invoice?
	Payment processing	
		How do you ensure that invoices are never paid early?
		How often do you pay invoices?
		If your payment runs is e.g. on wed 2nd May and 12th May and you have an invoice due thu 6th May, when do you pay this?
		How do you ensure the transparency of payment handling?
		Do all the budget holders know when invoices are processed?
		Have you provided the budget holders info table on the payment dates and key information?
		How does AP and treasury co-operate and communicate?
	Supplier query handling	
		Do you have an accounting helpdesk to handle supplier queries?
		How many supplier queries do you get to accounting in a month?
		Do you log supplier queries? To which system?
		How do you ensure prompt supplier query handling?
		How do you follow-up open supplier queries?

Policy	Area	Question
		How do you escalate the supplier queries if needed?
	Year end management	
		Do you know what is the year-end management?
		Do you follow this principle?
		Do you allow exceptions?